Appendix A
NOP and Comments



PLANNING AND BUILDING DEPARTMENT
PLANNING SERVICES DIVISION

http://www.edcgov.us/government/Planning

PLACERVILLE OFFICE:
2850 Fairlane Court, Placerville, CA 95667
BUILDING
(530) 621-5315 / (530) 622-1708 Fax
bldgdept@edcgov.us
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(530) 621-5355 / (530) 642-0508 Fax
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LAKE TAHOE OFFICE:
924 B Emerald Bay Rd.
South Lake Tahoe, CA 96150
(530) 573-3330
(530) 542-9082 Fax

TO: Interested Parties

FROM: Tom Purciel, Associate Planner, County of El Dorado

DATE: July 29, 2019

RE: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) and Notice of Public Scoping Meeting for the Dorado Oaks Tentative Subdivision Map

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Notice is hereby given that the County of El Dorado, Lead Agency, will prepare an Environmental Impact Report (EIR) for the **Dorado Oaks Tentative Subdivision Map** ("project") and will hold a public scoping meeting to receive comments on the scope of the EIR, as detailed below. The County has determined that an EIR must be prepared for the project prior to making any final decision regarding whether to approve the project, in accordance with the California Environmental Quality Act (CEQA). The County has issued this NOP to members of the public, Responsible Agencies, Trustee Agencies, federal agencies, transportation planning agencies, interested parties and other agencies with facilities that may be affected by the project. In accordance with CEQA, Responsible Agencies are those public agencies, other than the County, that have a role in approving or carrying out the project.

As detailed further below, a portion of the project would include improvements within the right-of-way (ROW) and adjoining areas of State Route 49/Pleasant Valley Road. These improvements are required to provide ingress and egress to and from the proposed Subdivision site. The California Department of Transportation (Caltrans) has delegated lead agency status for the portion of the project in their right-of-way. Accordingly, Caltrans will act as a Responsible Agency for the project. As such, both the proposed Dorado Oaks Tentative Subdivision Map and the proposed SR-49 Intersection improvements will be considered as a single project in the EIR. However, for purposes of clarity and to facilitate subsequent Caltrans review of project components under their jurisdiction, the Dorado Oaks Subdivision project component and the SR-49 intersection project component are described separately. The location, project description, project entitlement requests and potential environmental effects of the proposed project are summarized below.

PROJECT TITLE: Dorado Oaks Tentative Subdivision Map	**PROJECT LOCATION:** Approximately 142.3 acres of land in the unincorporated community of Diamond Springs in El Dorado County, California, roughly centered at 38°41′02.5″N, 120°49′08.9″W
LEAD AGENCY: County of El Dorado Planning and Building Department, Planning Services Division 2850 Fairlane Court Placerville, CA 95667	**LEAD AGENCY CONTACT:** Tom Purciel, Associate Planner 2850 Fairlane Court Placerville, CA 95667 Telephone: (530) 621-5355 dorado_oaks@edcgov.us
PROJECT SPONSOR/DEVELOPER: Stonehenge Springs LLC 2700 South Azusa Avenue West Covina, CA 91792	**DATE OF THIS NOTICE:** July 29, 2019

Public Review and Scoping

Comments and suggestions are requested during the 30-day public comment period for the NOP regarding the environmental issues that will be analyzed in the EIR. Because of time limits mandated by State law, written comments should be provided no later than **5:00 PM on August 28, 2019**. Please consider that there will be another opportunity to submit detailed comments when the Draft EIR is released for public review.

Comments on the proposed scope and content of the EIR may be submitted in writing to the attention of Tom Purciel, County of El Dorado, at the address indicated above for Lead Agency Contact. Comments may also be emailed to the project-specific email address shown above. The County requests the name, address, telephone number and email address of all agencies or individuals submitting comments.

The County will hold a public scoping meeting to provide additional information about the project, receive written comments and help the County refine the scope and content of the EIR.

Date: August 20, 2019

Time: 6:00 PM to 8:00 PM

Location: Firefighter's Memorial Hall
3734 China Garden Road
Diamond Springs, California 95619

The scoping meeting format will consist of a brief overview of the project, followed by an open house; interested parties may arrive at any time during the open house portion of the meeting to receive information on the Project or provide comments.

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR)

DORADO OAKS TENTATIVE SUBDIVISION MAP

Project Location

The project site is located in the unincorporated Diamond Springs Community Region in El Dorado County, California, about three miles south of Placerville and 40 miles east of downtown Sacramento. The site's regional location is presented in **Figure 1**. Regional access to the area is generally provided by U.S. Highway 50 (US-50), which is a major national highway corridor that begins in Sacramento and crosses the Sierra Nevada Mountains to south Lake Tahoe and continues on to points east. SR-49 provides access to the area from the north and the south along the western front of the Sierra Nevada Mountains and its foothills.

Project Site Overview

The project consists of both on-site improvements ("Dorado Oaks Tentative Subdivision Map Site") and off-site improvements ("State Route 49 Intersection Site") related to a proposed 381-lot residential subdivision. For purposes of environmental review, the on-site improvements are described separately as the Dorado Oaks Tentative Subdivision Map Site and the associated off-site improvements are referred to as the State Route 49 Intersection Site. Proposed work at both locations is collectively referred to as the "project".

Dorado Oaks Tentative Subdivision Map Site

The Dorado Oaks Tentative Subdivision Map site is located immediately south of SR-49, extending southwards from the intersection of SR-49 and Faith Lane (see **Figure 2**). The site is bounded to the west by open space areas and a residential subdivision comprised of single family homes. South of the site lies undeveloped open space and scattered rural homes. To the east, the site is generally bounded by low density residential areas. To the north lies the SR-49 commercial corridor, with the most intensive commercial uses in the Diamond Springs area beginning about one-quarter-mile to the east. US-50 lies about three miles to the north, and is most directly reached via SR-49 or Missouri Flat Road. The US-50 corridor contains regional-serving commercial facilities, as well as the historic core of the City of Placerville.

The project site is approximately 142.3 acres, and consists entirely of undeveloped open space. Faith Lane extends into the project site southwards from SR-49. The roadway is paved for about the first 600 feet, and then encounters a locked gate, after which it becomes dirt. A number of dirt tracks run within the project site, none of which are public roadways. Portions of the site were cleared and graded as part of previous development proposals, but none of the previous development efforts were carried through to completion. The site is generally covered with oak woodlands, consistent with other undeveloped areas in the vicinity. A small El Dorado Irrigation District (EID) sewer lift station lies within a fenced enclosure in the northeastern portion of the site, and serves an existing sewer line within an easement that runs through a portion of the site. Other than this facility, there are no other structures on the site.

State Route 49 Intersection Site

The SR-49 intersection site is shown in greater detail in **Figure 3**. It should be noted that the area shown on the figure incorporates all of the areas associated with the four intersection options that are currently under consideration, as described below. This combined area also incorporates a buffer area for purposes of the environmental analysis. Assuming that only one of the options would ultimately be constructed, the actual intersection area would be substantially smaller than that shown in the figure, and encroachment into the larger illustrated buffer areas would be limited. The EIR, however, will analyze the entire area.

The SR-49 intersection site is currently comprised of roadways adjoining roadside and commercial areas. SR-49 along this segment is configured as an undivided two-lane roadway with a 25 mph speed limit, and is largely fronted with commercial properties. It is classified as a Major 2-Lane Road in the County's General Plan. Traffic counts taken in 2018 at the intersection of SR-49 and Faith Lane found that the roadway along this segment carried approximately 1,240 vehicles per hour during the AM peak period, and 1,579 vehicles per hour during the PM peak period.

Businesses within and adjacent to the project area are generally small in nature. The southwest corner of SR-49 and Silver Drive contains a small shopping center (Diamond Springs Plaza) with a printing shop, a hair salon, and similarly-sized businesses. Slightly further east, Deb's Frosty is located on the southwest corner of SR-49 and Faith Lane. The strip mall at the southeast corner of SR-49 and Faith Lane contains a bicycle shop, a pet store, gift shops, and similar businesses. Also on this corner are two older brick buildings that appear to be vacant. The Gust Brothers Building lies on the northeast corner of SR-49 and China Garden Road, and contains a number of small businesses, including a dental office and a hair salon.

Existing Land Use and Zoning

Dorado Oaks Tentative Subdivision Map Site

Existing General Plan Land Use Designations

The Dorado Oaks Tentative Subdivision site is currently comprised of two designated land use areas, as designated and defined in the County's General Plan. **Figure 4** shows the existing General Plan land use designations for the project site and surrounding areas.

High Density Residential (HDR): This land use designation identifies those areas suitable for intensive single-family residential development at densities from one to five dwelling units per acre. Allowable residential structure types include single-family attached (i.e., air-space condominiums, townhouses) and detached dwellings and manufactured homes. Except as provided in General Plan Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers.

Multi-Family Residential (MFR): This land use designation identifies those areas suitable for high-density, single family and multifamily design concepts such as apartments, single-family attached dwelling units (i.e., air-space condominiums, townhouses and multiplexes), and small-lot single-family detached dwellings subject to the standards set for in the Zoning Ordinance and which meet the minimum allowable density. Mobile home parks, as well as existing and proposed manufactured home parks, are also permitted under this designation. Lands identified as MFR shall be in locations with the highest degree of access to transportation facilities, shopping and services, employment, recreation, and other public facilities. Mixed use development within Community Regions and Rural Centers which combine commercial and residential uses are permitted.

Except as provided in General Plan Objective 2.2.6 (Site Specific Policy), the minimum allowable density for MFR is five dwelling units per acre, with a maximum density of 24 dwelling units per acre. Except as provided in General Plan Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers.

Existing Zoning Designations

The Dorado Oaks Tentative Subdivision Map site is comprised of two zoning areas. **Figure 5** shows the existing zoning designations for the project site and surrounding areas. The zoning designations for the site are listed below, with zoning descriptions from the County's Zoning Code (El Dorado County, 2015):

Single-Unit Residential (R1): The Single-unit Residential Zone is used to promote and regulate the development of higher density, single-unit dwellings, and accessory structures and uses. Minimum lot size designations of R1 are applied to this zone based on surrounding use compatibility, and physical and infrastructural constraints. The designation represents the minimum lot size of 6,000 square feet. This zone is applicable to lands designated as High Density Residential (HDR) in the General Plan.

Multi-Unit Residential (RM): The RM, Multi-unit Residential Zone identifies those lands which are most capable of supporting the highest density of development within the County, based on topography, infrastructure, and circulation availabilities and constraints, as well as proximity to employment centers, public facilities, recreation, and shopping. It is applied to regulate and promote the development of multi-unit dwellings, including apartments, condominiums, and townhouses, while ensuring compatibility with surrounding lower density residential neighborhoods. Detached or attached residential dwellings are allowed in accordance with the standards set forth in the zoning ordinance, providing the minimum density of at least 5 dwelling units per acre is met. This zone is utilized in Community Regions and Rural Centers to meet affordable housing goals identified in the Housing Element of the General Plan. Mobile home and manufactured home land lease development are also allowed within this zone. This zone is applicable to lands designated as Multi-Family Residential (MFR) in the General Plan.

Project Overview

Dorado Oaks Tentative Subdivision Map Site

The Dorado Oaks Subdivision consists of the following entitlement requests:

1. A Rezone of an 8.94-acre portion of the 142.3-acre project site from Residential, Multi-Unit (RM) to Residential, Multi-Unit - Planned Development (RM-PD);

2. A Phased Tentative Subdivision Map, consisting of 14 Large Lots, to subdivide the 142-acre property into 156 single-family lots ranging in size from 6,000 square feet to approximately 24,000 square feet, 225 multi-family lots ranging in size from approximately 2,800 square feet to 8,800 square feet and 20 open space/landscape lots; and

3. A Planned Development Permit to establish an official Development Plan for Dorado Oaks Subdivision that includes modification to specific development standards in the RM zone district for 91 of the proposed multi-family lots on an 8.94-acre portion of the project site.

This component of the project would provide for development of residential uses on a series of parcels that cover a combined area of approximately 142.3 acres. **Figure 6** shows the proposed subdivision map. In addition to the proposed residential and open space lots, other components of the project include:

- On-site roadway improvements to facilitate circulation within the development (18.51 total acres).
- Provision of a 3.13-acre public park site, to include a soccer field and other amenities.
- On-site infrastructure improvements relating to potable water delivery, wastewater conveyance, and storm drainage.
- Provision of four public vehicular access points and one emergency vehicle access point to and from the project site to existing adjoining roadways:
    1) Faith Lane, connecting to SR-49/Pleasant Valley Road and providing primary access at the north end of the project site.
    2) Faith Lane, connecting to Argonaut Drive on the west side of the project.
    3) "D" Street, connecting to Crystal Drive/Tullis Mine Road on the northwest side of the project site.
    4) "C" Street, connecting to Fowler Lane on the northeast side of the project site.
    5) "H" Court, providing emergency vehicle access to Fowler Lane on the southeast side of the project site. Minor widening may be necessary along the southerly portions of Fowler Lane to meet County Fire Department requirements.

State Route 49 Intersection Site

This component of the project would provide access to the Dorado Oaks Subdivision site from State Route (SR) 49, which is also known in this vicinity as Pleasant Valley Road. **Figure 7** shows the four intersection options that are currently under consideration, which include the following:

- Option A: a four-way roundabout at the intersection of China Garden Road/SR-49, east of Faith Lane.
- Option B: a three-way roundabout between Silver Drive and Faith Lane at SR-49.
- Option C: a signalized T-shaped intersection at Faith Lane/SR-49.
- Option D: a signalized T-shaped intersection at Silver Drive/SR-49.

Environmental Effects and Project Alternatives

Environmental Topics to be Evaluated in the Draft EIR

The EIR will review all resource topics listed in Appendix G of the CEQA Guidelines in effect at the time the County deemed the project application complete on October 22, 2018. The list of environmental topics that will be evaluated include: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, and Utilities and Service Systems.

In addition to the above areas, the Draft EIR will also evaluate the potential cumulative and growth inducing effects of the project, as required by CEQA. Reasonably foreseeable future projects in the project vicinity will be considered in this analysis.

Comments and suggestions are requested during the 30-day public comment period for the NOP regarding the environmental issues that will be analyzed in the EIR.

Potential Alternatives to be Evaluated in the EIR:

In accordance with section 15126.6 of the CEQA Guidelines, an EIR must "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." As required by CEQA, the EIR will evaluate a No Project Alternative. Aside from the No Project Alternative, the County has not yet determined what additional alternatives to the project will be evaluated in the EIR. These will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.

Intended Uses of the EIR

The EIR will fully evaluate the environmental effects associated with the implementation of the Dorado Oaks Tentative Subdivision Map project. The EIR is intended for use for a number of approvals and entitlements from the County and other agencies. It is expected that these approvals could include the following:

County of El Dorado

- Certification of the Dorado Oaks Tentative Subdivision Map project EIR pursuant to CEQA;
- Tentative Subdivision Map;
- Adoption of a Planned Development overlay zone for the subdivision project area;
- Development Agreement;
- Public Facilities and Financing Plan (PFFP);
- Design Review Permits for the design of structures, common areas, and roadways; and

  Other local approvals that may be required, such as:

  - Grading permits;
  - Demolition permits;
  - Construction Waste Management Plan (for construction waste);
  - Encroachment permits;
  - Building permits; and
  - Other County approvals as necessary to develop the project.

The project would require review and recommendation by the Planning Commission to the County Board of Supervisors, followed by consideration and action by the Board of Supervisors. The EIR would provide the CEQA-required environmental documentation for use in considering County approvals required to implement the project.

Other Governmental Agencies

As the Lead Agency and as appropriate under CEQA, the County also intends the EIR to serve as the CEQA-required environmental documentation for consideration of this project by other

Responsible Agencies and Trustee Agencies which may have limited discretionary authority over development proposals associated with the project. Under the CEQA *Guidelines*, the term "Responsible Agency" includes all public agencies, other than the Lead Agency, which have discretionary approval power over aspects of the project for which the Lead Agency has prepared an EIR (CEQA Guidelines Section 15381); and the term "Trustee Agency" means a state agency having jurisdiction by law over natural resources affected by the project which are held in trust by the people of California (Section 15386). Responsible Agencies and Trustee Agency approvals for the project may include, but are not limited to, the following:

- **Caltrans District 3**
  - Issuance of an encroachment permit for construction of the selected SR-49 intersection option;
  - Review and approval of the design and construction of the intersection project.
- **El Dorado County Transportation Commission (EDCTC)**
  - Review of the project in relation to the Regional Transportation Plan, the Diamond Springs and El Dorado Area Mobility and Livable Community Plan and Improvement Program.
- **El Dorado County Air Quality Management District (AQMD)**
  - Review of project plans may be required.
- **El Dorado County Fire District**
  - Review of project with consideration for impacts to firefighting and emergency services.
- **El Dorado Irrigation District (EID)**
  - Review of project with consideration for impacts to EID facilities.
- **Other utilities and community service providers**
  - Review of project with consideration for impacts to facilities and services.
- **Central Valley Regional Water Quality Control Board (RWQCB)**
  - National Pollution Discharge Elimination System (NPDES) General Permit for storm water discharges associated with construction activity;
  - Clean Water Act Section 401 Water Quality Certification and Notice of Intent for construction activities; and
  - Storm Water Pollution Prevention Plan (SWPPP) for on-site storm water management and pollution prevention.

- **California Department of Fish and Wildlife (CDFW)**
  - Section 1602 Streambed Alteration Agreement; and
  - CDFW would also review and comment on specific sensitive species aspects of the project if potential effects are found.
- **U.S. Army Corps of Engineers (USACE)**
  - Approval of Section 404 Permit under the Federal Clean Water Act for project impacts to jurisdictional waters of the United States.

Requests for Additional Information

If you have any questions, please contact Tom Purciel at the County of El Dorado, Planning and Building Department-Planning Services Division, 2850 Fairlane Court, Building C, Placerville, CA 95667, by telephone at (530) 621-5355, or by email to dorado_oaks@edcgov.us.

Attachments:

Figure 1 – Regional Location

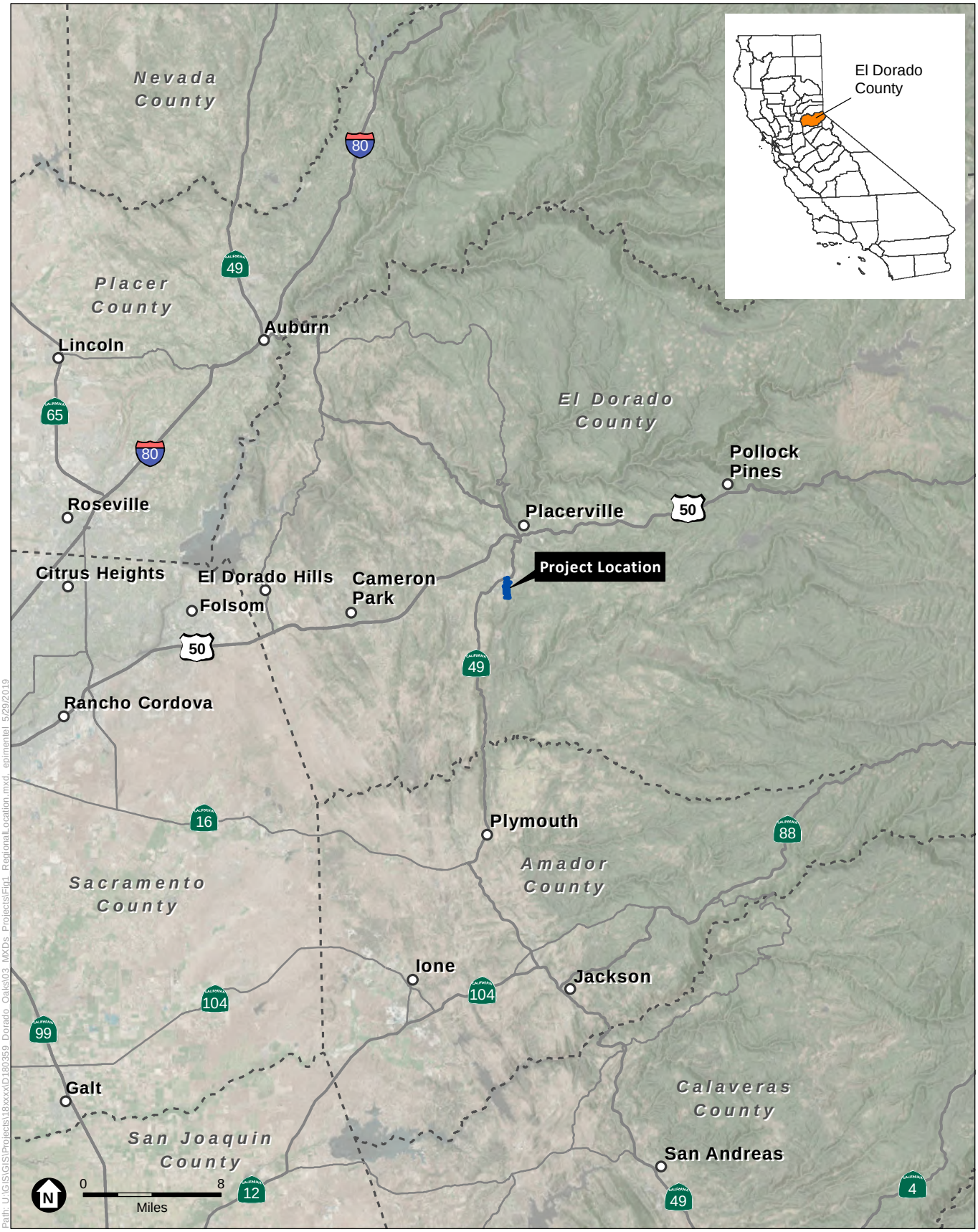
Figure 2 – Project Overview

Figure 3 – State Route 49 Intersection Site Exhibit 4 – Existing General Plan Land Use Designations

Figure 5 – Existing Zoning Designations

Figure 6 – Dorado Oaks Tentative Subdivision Map

Figure 7 – State Route 49 Intersection Options

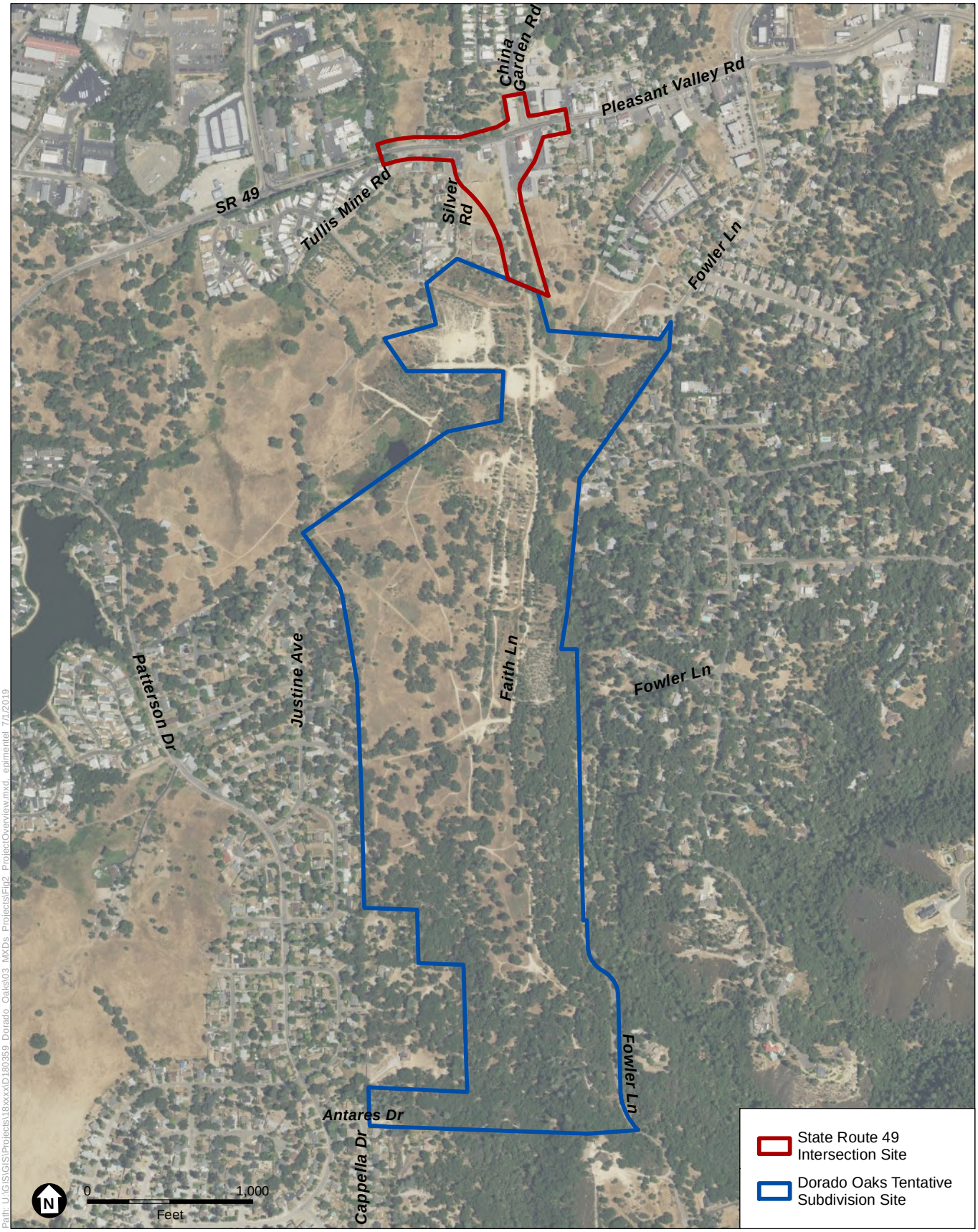


SOURCE: Esri, 2018; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 1
Regional Location

ESA



SOURCE: USDA, 2016; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 2
Project Overview

ESA

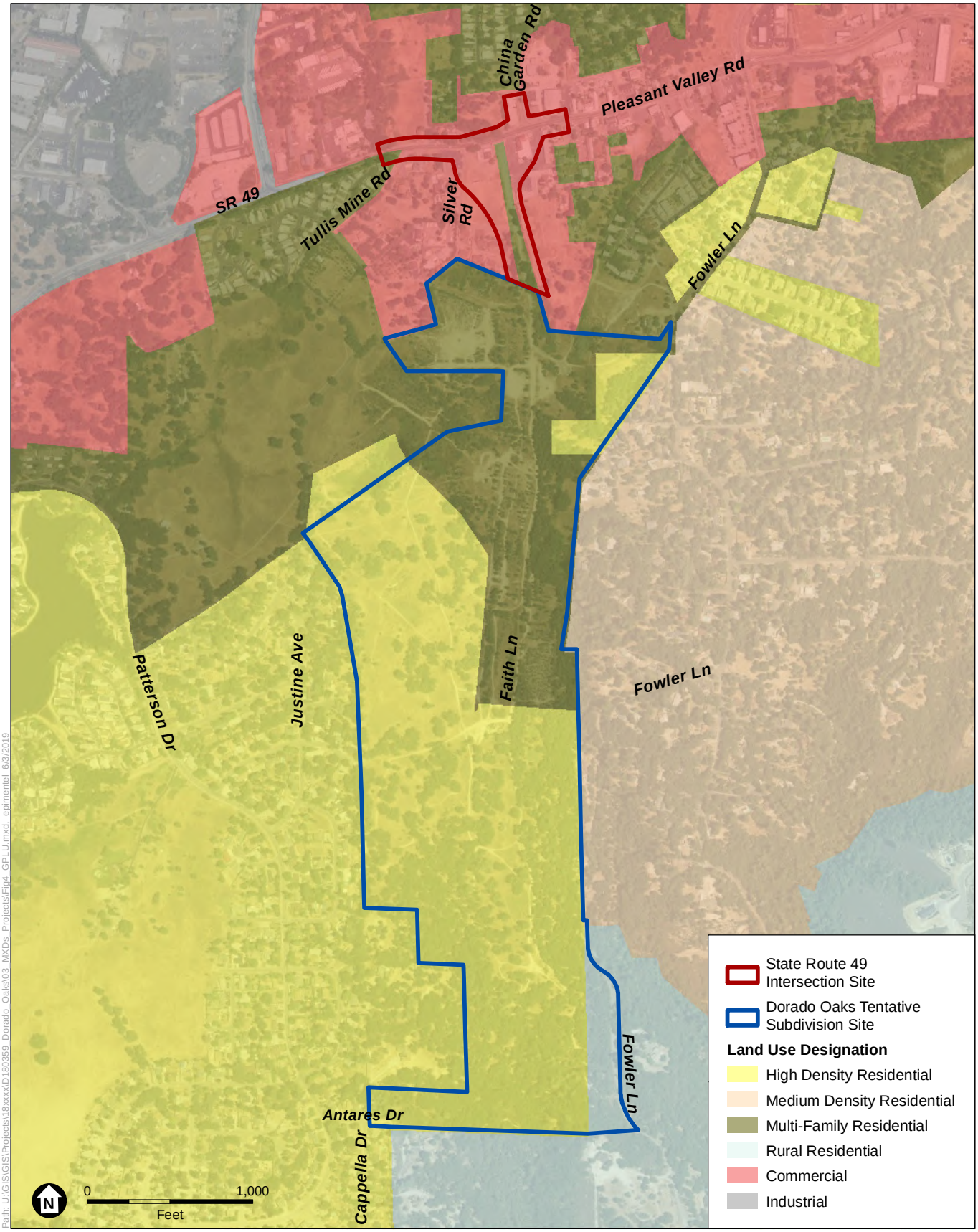


SOURCE: USDA, 2016; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 3
State Route 49 Intersection Site Detail

ESA

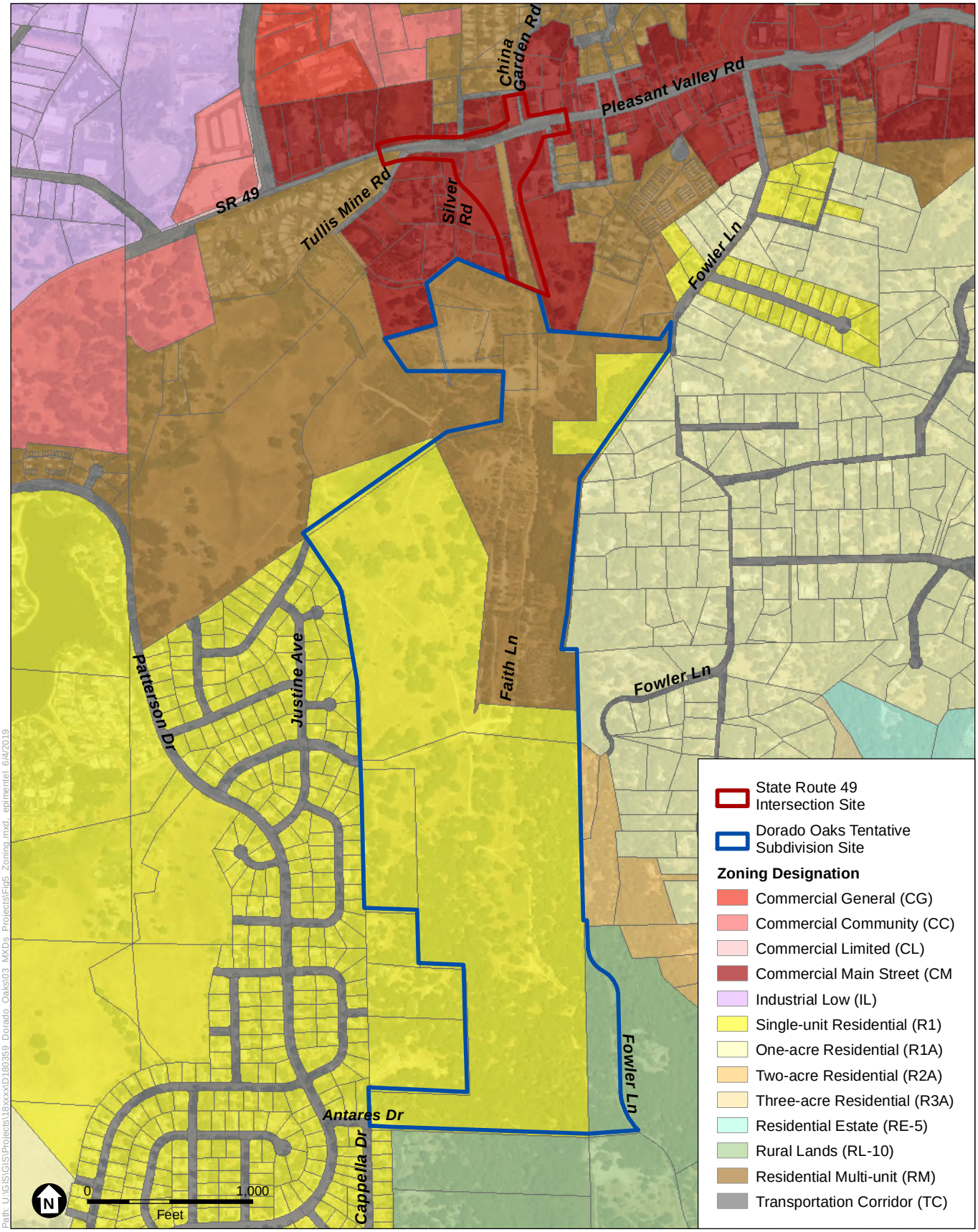


SOURCE: USDA, 2016; El Dorado County, 2018; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 4
Existing General Plan Land Use Designations

ESA

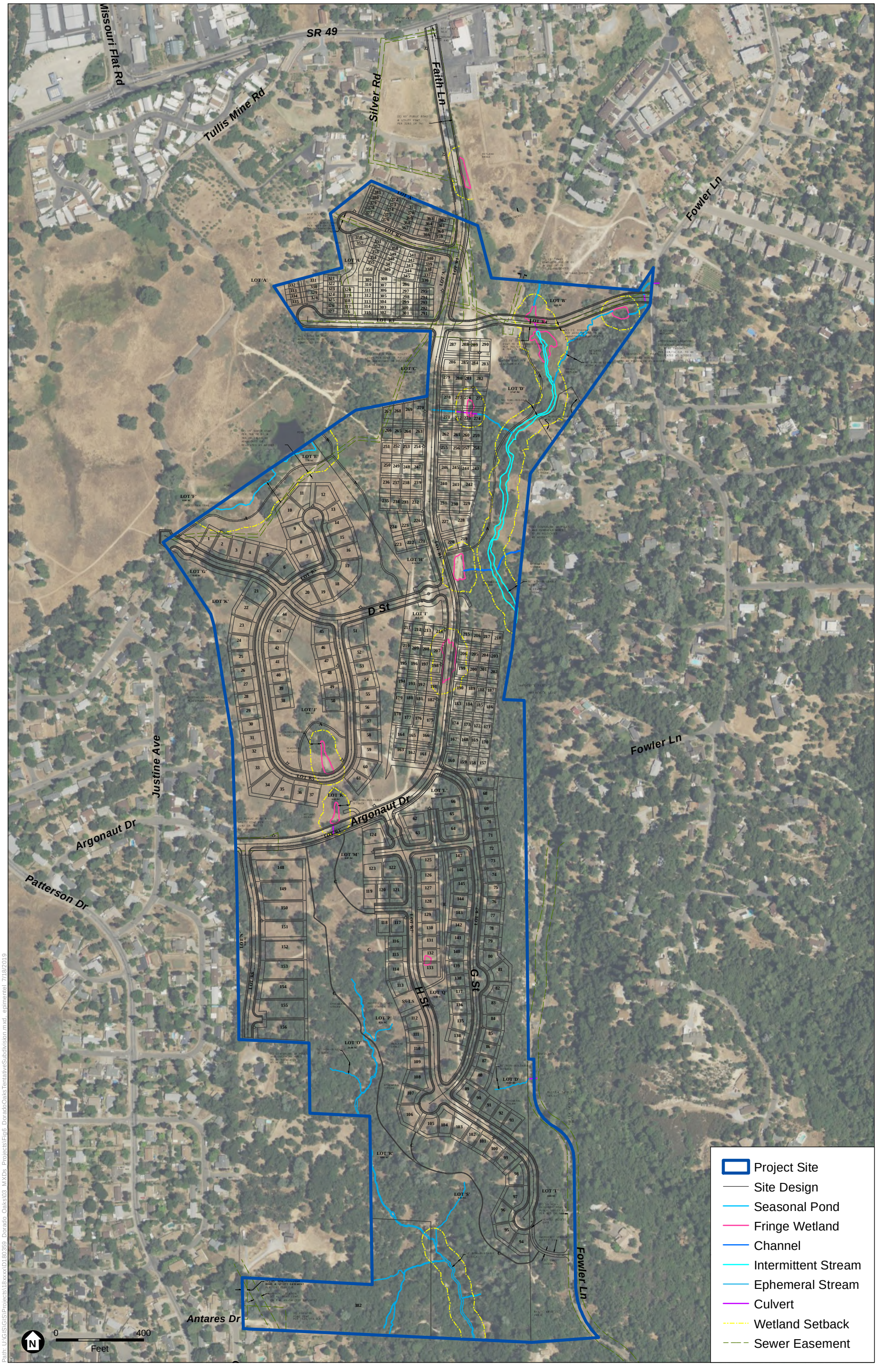


SOURCE: USDA, 2016; El Dorado County, 2019; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 5
Existing Zoning Designations

ESA

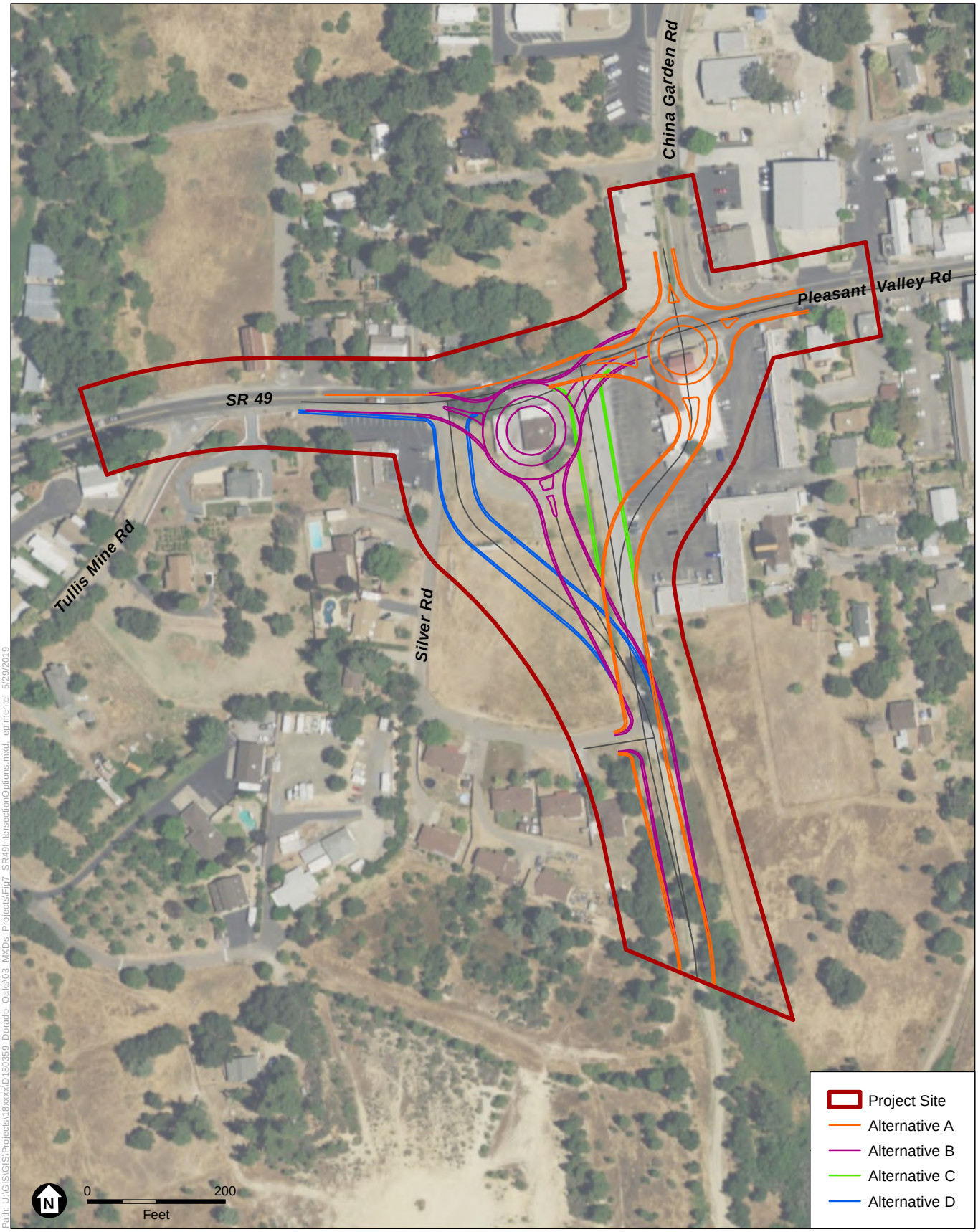


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SOURCE: USDA, 2016; CTA, 2019; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 6
Dorado Oaks Tentative Subdivision



SOURCE: USDA, 2016; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 7
State Route 49 Intersection Options

ESA

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-4233
FAX (530) 741-4245
TTY 711
www.dot.ca.gov/dist3

Making Conservation a California Way of Life.

August 26, 2019

GTS# 03-ED-2016-00149
03-ED-50 PM 11.512
SCH# 2019071041

Efren Sanchez, Associate Planner
El Dorado County
2850 Fairlane Court, Building C
Placerville, CA 95667

Dorado Oaks (Stonehenge Springs)

Dear Mr. Efren Sanchez:

Thank you for including the California Department of Transportation (Caltrans) in the Notice of Preparation of a Draft Environmental Impact Report review process for the project referenced above. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development - Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

The Dorado Oaks project is located southeast of the intersection of Missouri Flat Road and Pleasant Valley Road at the southern terminus of Faith Lane in the Community Region of Diamond Springs. The project proposes approximately 361 single family detached lots. 51 lettered lots (landscape, open space, recreation facilities and clubhouse).

The following comments are based upon the Notice of Preparation of a Draft Environmental Impact Report documents received.

Traffic Operations – Highway

The below comments are made on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) and Notice of Public (NOP) Scoping Meeting for the Dorado Oaks Tentative Subdivision Map, dated July 29, 2019.

• Caltrans previously reviewed and commented on the Transportation Impact Study (TIS) – Draft Report for Dorado Oaks, in El Dorado County, CA, dated July 2, 2018, by Prism Engineering prepared for the proposed Project.

• Caltrans also concurred with all the comments documented in the Memorandum to Katie Jackson, PE, TE, and Natalie Porter, PE, TE entitled Peer Review of the Dorado Oaks Transportation Impact Study, dated July 19, 2018, by DKS Associates.

• Caltrans would like an updated TIS as part of the DEIR that addresses all comments made by the County of El Dorado, DKS, and Caltrans.

• The NOP project land use is different than the TIS project land use, dated July 2, 2018. NOP land use and TIS land use should be consistent.

• The DEIR proposes SR 49 (Pleasant Valley Road) at Silver Road/Faith Lane/China Garden Road intersection improvements. Please include an Intersection Control Evaluation, based on Caltrans Policy Directive 13-02 for these intersection improvements.

• Any work within Caltrans right of way may require an encroachment permit.

Model & Forecasting

Model & Forecasting agrees with comments provided by Traffic Operations - Highway. An updated TIS should be completed in which no build volume on project opening day and no build + project volume on opening day should be added. My comments from the draft TIS review stage should also be included.

Traffic Operations - Encroachment Permits

The project limit is outside the State highway system right of way. However, If other Caltrans functional units request mitigation measures, then an encroachment permit will be required.

Highway Maintenance

Work (including sidewalks and roundabouts) will require a Maintenance Agreement, and all work must be maintained by the agency. Construction work must meet Caltrans Standard Plans and Specifications within the State Route 49.

Hydraulics

This project will potentially result in an increase in peak surface water runoff due to construction of buildings and parking, roads etc. and an increase in impermeable surface area. Peak runoff discharge for the 10 and 100-year storm events to the State's highway right of way and to Caltrans' highway drainage facilities must be reduced to at or below the pre-construction levels. This may be accomplished through the implementation of storm water management Best Management Practices (i.e., detention/retention ponds or basins, sub-surface galleries, on-site storage and/or infiltration ditches, etc.). Once installed, the property owner must properly maintain these systems. The proponent/developer may be held liable for future damages due to

impacts for which adequate mitigation was not undertaken or sustained. In addition, runoff from the proposed project that will enter the State's highway right of way and/or Caltrans drainage facilities must meet all regional water quality control board water quality standards prior to entering the State's highway right of way or Caltrans drainage facilities. Appropriate storm water quality Best Management Practices may be applied to ensure that runoff from the site meets these standards (i.e., is free of oils, greases, metals, sands, sediment, etc.). Once installed, the property owner must properly maintain these systems in perpetuity.

All work proposed and performed within the State's highway right of way must be in accordance with Caltrans' standards and require a Caltrans Encroachment Permit prior to commencing construction. For the encroachment permit application, provide drainage plans and calculations for the pre and post 10 and 100 peak run-off (quantities and velocities) and water quality treatment for all discharge to the State's highway right of way and to Caltrans' highway drainage facilities.

If you have any question regarding these comments or require additional information, please contact Amber Moran, Intergovernmental Review Coordinator for El Dorado County, by phone (530) 634-7624 or via email to Amber.Moran@dot.ca.gov.

Sincerely,

KEVIN YOUNT, Branch Chief
Office of Transportation Planning
Regional Planning Branch—East

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Corey Ward

Email: WARSJeep52@hotmail.com

Address: 2189 Sunrise Dr
D.S. / CA 95619

I STRONGLY OBJECT TO THIS proposed project. As a 4TH GENERATION DIAMOND SPRINGS citizen, this PROJECT IS NOT IN the best INTERESTS OF this TOWN. Traffic IN this town IS already terrible & THIS would ONLY INCREASE ten fold. If this goes through, what IS the POINT of the current DIMOND SPRINGS by PASS project that IS CURRENTLY IN phase (I). This SUBDIVISION will PUT TRAFFIC back ONTO MISSOURI FLAT Rd. & IN turn back ON P.V. Roads. Does NOT MAKE ANY SENSE.

Respectfully

Corey Ward

Corey Ward

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Louise Locken **Address:** 5593 Crossbill Ln, El Dorado

Email: llocken3491@comcast.net

I travel through Diamond Springs frequently & the traffic is my #1 problem with this project. Our roads are not designed to handle the existing traffic let alone the traffic that will be added with this project. Could there be other roads built off site or along side of project that could connect with Hwy 50 or Missouri Flat ??

I realize housing is needed but let's use common sence & grow with ease.

Thank you
Louise Locken

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Teresa Berkery **Address:**

Email: terryis2003@yahoo.com

Push Missouri Flat through - problem solved.

We keep our way of life and the new homes travel less miles.

Buy out the mobile home pk. Move it over. Buy those people new mobile home. Still cheaper

What else are tax payers going to pay for.

You're breaking our backs!

We simply cannot pay for everything!

Where is the water coming from. Extra pollution.

Where is the wildlife supposed to go?

Selfish Money grab again

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Ariel schostag

Email: Angela Geller

Address: 4426 cash boy road

Go For it!!! we are supportive.

Thanks Kevin ☺

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Robert King + Judy Cooper

Email: RaKing86@yahoo.com

Address: 4294 Toyan DR. Diamond Springs,

We feel it would way overcrowd our neighborhood. We Live off Fowler. The Road would be ~~poot~~ packed all the time. We vote NO.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Gertie Belker **Address:** 4426 Cash Boy Road

Email:

We are supportive. There is a lack of housing in El Dorado County. Might help the homless

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: **Address:**

Email:

Jim Ahrens PO Box 3190 Diamond Springs Against No
Tracie Ahrens PO Box 1052 Diamond Springs No

No new income low traffic

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: TERRY SMITH **Address:** 5324-SHARON LN

Email: rascalone@sbcglobal.net

How dare you people destroy Diamond Springs! The road is already overcrowed causing traffic problems. What are you people thinking— We the people like Diamond Springs the way it is!

Terry Smith

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Greg Alterton
Email: gregalterton@gmail.com
Address: 6500 Oak Dell Road
El Dorado 95623

(1) One of my concerns with the proposal is the likely impact on traffic on Pleasant Valley Road, which during early morning, late afternoon, and on weekends, seems close to maximum capacity now. The Lime Kiln bypass has been mentioned as a mitigation, but how likely is it that commuters from up in Pleasant Valley will take the bypass when 49 to Missouri Flat is a direct route? I live off of 49 near Koki Lane and the back-up from Koki to the high school is gridlocked almost to Missouri Flat in early morning. This project can only exacerbate that gridlock.

(2) Concerned about loss of open space and the loss of existing rural character of this area.

(3) Concerned about loss of habitat for wildlife.

(4) Concern about high density apartments. Aside from environmental impacts, will the impact on crime and safety of high density apartments be considered?

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Kim F. Smith + Denise A. Dellagatta

Address: 193 ARGONAUT DRIVE

Email: deniseann528@yahoo.com

Request:

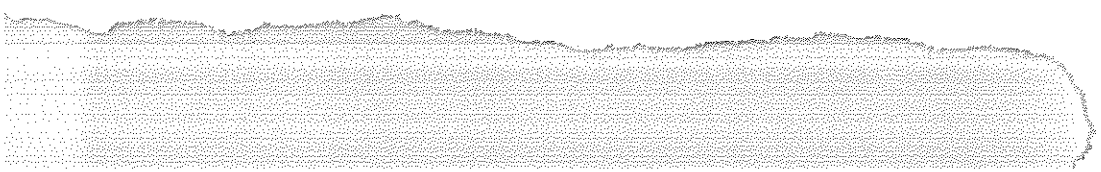
Argonaut drive speed bumps AND CAUTION CHILDREN SIGNS OR FIRE LANE ONLY WITH GATE.

We BOUGHT HOUSE IN COUNTRY FOR PEACE & QUIET We DO NOT WANT to LIVE ON A MAJOR STREET THIS WILL DEPRECIATE OUR PROPERTY VALUE A LOT. We NEED to BE COMPONSATED FOR THE FINANCIAL LOSS THIS IS CAUSING FOR US.

Kim F. Smith – Home Owner

also Request Low density single-family homes Not multi family Also some Open Space areas with Big Oak trees

Denise Dellagatta
Home Owner



Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Leon Castiaux

Address: 353 Griffith Rd. Diamond Springs

Email: lmcastiaux@comcast.net

~~I'm concerned~~

I'm the development of the project a sports field and playground for both residences & neighboring (Deer Park). The closest one is now several miles away.

Evacuation Routes are of a very high concern. This includes the width of main streets to allow vehicle evacuation and allow emergency vechicle ingress. This must include multiple exits to include ajoining area like Deer Park & Fowler Lane.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Adeline Penn **Address:** 4461 Lewis Rd D.S. 95619

Email: adeline@enmagine.com

Water
Sewer
Roads
Infrastructure
Schools
> are the resources there? If not, how do you plan to provide this

Fire = evacuation routes that are already a possible Paradise waiting to happen
are there plans for this

Further development plans/changes = please put me on the contact list to receive notices !!!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Mary McCombs **Address:** 3550 Chan Garden Rd P-Ville

Email:

I am against this development. I am for retaining undeveloped areas of this county. This development will cost Diamond Springs the treasured small town feeling that we love. Will individual developers or corporation ever think of the land and those who have lived here and value this area as it is, ever overcome their greed?

Why not remain the general plan?

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Pat Brown **Address:** 1320 Sherwood Ln D.S.

Email: pand@cal.net

- Chairs needed for elderly
- Microphone was needed to hear Q + A's
- Generally a poor meeting - unable to access tables + hear comments.
- *The density of this project ~~is~~ would destroy our historic small town. Scale it down by ½!
- Parkland is inadequetly planned.
- No Roundabouts!

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Susan Sinetos
Email: SSinetos@sbcglobal.net

Address: 4080 Wimbledon D.S.
3040 Granada Ct # 20 C.P

We have a HUGE shortage of homes in our County.
our Children + grandchildren need Homes.
we need the infastructure + the Homes.
Build it !

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: LINDA RUSK **Address:** 4261 LIME KILN RD

Email:

lrusk@gmgair.com

totally against the development & all the stones & traffic

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: DAN & LAURA MURPHY **Address:** 551 SHADY OAK LANE D.S., 95619

Email: dlhamurphy@comcast.net

THERE GOES OUR QUALITY OF LIFE!!

STOP THE DEVELOPMENT!!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: DAVID TUCKER **Address:** 154 ARGONAUT DR.

Email: didtucker9530@gmail.com

ARE THESE THE ONLY 4 OPTIONS CONNECTING TO PLEASANT VALLEY RD.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Romaine Daher

Email: rdelriodaher@yahoo.com

Address: 1161 Heartland Rd
Placerville CA
95667

- Traffic - It's already backed up to Zandonella from D. Springs It's already a big problem.
- Fire - Those of us up the hill from downtown D.S. are concerned about fire evacuation. This development would add to the problem.
- Fire - The D.S. fire dept is already stretched thin. Reopen the Oak Hill Fire Dept
- low income housing is needed but should be off Hwy 50 not impacting small communities
- We go to Europe alot and roundabouts are not sufficient for the proposed added density
- Fire - Behind this proposed development is a canyon with a PG+E designation of 2+3.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Sherry & Steven Morris **Address:** 4261 & 4263 Fowler Ln.

Email: sherryandstevenmorris@gmail.com

- This project is way too high density for our community. We already have 60 homes going in across from Lime Kiln Rd. So that is more than enough
- This project shows homes covering some natural springs; you know that relates to the city name they should not be covered up.
- Traffic will not be helped by a round about if cars are very close to each other it prevents movement. Also #1 would take away the flea market # 2 would take away Debs Fosty.
- Fowler has already lots of traffic and most of it is speeding
- Fire Danger and people already can't get insurance all the homes that are for sale are backing out due to insurance costs.
- Soccer field would bring in more outside people, and hopefully no lighting for night play.

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Peter Martinez **Address:** 647 N Circle PR Diamond Springs

Email: PDMConst@Hotmail.Com

Traffic and over Crowding the area

Your Plan is TO dense For such a

Small area There is wild Life and

Poulution to Consider.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Judith Bell

Address: 635 Crestview Dr. Diamond Springs

Email: [redacted]

This project will effect traffic, water, wild life and fire evaculation routes. I am adamently against destroying the rural community and displacing wild life and destroying oaks, pines.

Follow the money

Read the Planning Commission's Mission Statement

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: John and Maria Wetterstrom **Address:** 582 Cappella Dr. Diamond Springs.

Email: mary.w.7@hotmail.com

I do not oppose this project. I believe that our county is in great need for more housing. We live in Deerpark and my main concern is for the impact this new development is going to have on the local schools. Our home school is Indian Creek El. and we chose to have our 5 yr. old in the Charter Hybrid homeschool program @ Charles Brown because the local school has a really big student population. Will Charles Brown have to reopen? and if so what does that mean for the Charter currently using that site.

Thank You.

Side note, the set this evening was less than ideal. I hope the next meeting will have more structure and organization.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Lowell S Smith 409-5854 **Address:** 4480 Canyon Falls Road Placerville CA
Email: Lowell@designsmithteam.com

As a business owner I am opposed to the density of this project, Traffic concerns are paramount -

I suggest a disinterested non affiliated professional firm conduct a thorough Traffic impact study - then have that study presented to the public - in the newspaper and on line and at a public meeting

The density of this project is fundamentally contrary to the majority of property owners who have come here to escape this very type of developement.

Lowell Smith

This project will not be allowed per (Measure E)
(A law suit may be necessary)

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: William Smith **Address:** 4930 JACKRABBIT DR PLACERVILLE

Email: William@designSmithteam.com

I have a serious concern about the density of the project & the added stress ~~to~~ ~~[illegible]~~ & Volume of traffic to an already poorly developed Road way. IF anyone is conscious of safety & a quality of life that is important to all that Live here, ~~the~~ those proposing this project should Listen to those that oppose this project & Let us enjoy the lives we signed up for without your short sided development that is very Appearant that yw dont plan on Living Near! OUR OPPINION Should Matter to You!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Jane Urquidez

Address: 745 Crestview Dr
Diamond Sp 95619

Email: Teamjane@comcast.net

Where are all the people that buy here work? Why do people want to Live here? When the Folsom Housing Project is going in how is there really that much work for people: Are they all going to commute. Cause there's no Place here for people to work.

What are the price of the home's - condos ---?
Roads are a real issue.
Water where is it coming from?
sewer - ?
Please Do Not Bring this to this area there is NO Room! We do not want this. Go Away.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Alida Martinez **Address:** 647 N. Circle Dr.

Email: amartinez.realestate@gmail.com

I am very concerned that this project would diminish the quality of life I've enjoy in Diamond Springs.

We already have traffic backups on Pleasant Valley and cannot fathom how all these extra homes will make things better.

Diamond Springs does not want to become an urban center - that's what the big cities are.

It is disappointing to have the government force Their plan on the community.

I am Against the density of this project. ~~to~~ too many houses in one area.

I moved from Sacramento 4 years ago to get away from this high density. Make one acre parcels like the rest of the area. Don't kill our way of life for the benefit of Southern California Developers.

BAD BAD BAD BAD IDea!

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: JULIEANN & IAN KEIR **Address:** 4301 FOWLER LANE, D.S.

Email: KEIRCLAN4@YAHOO.COM

- Size & scope of development project [# of homes, apts, etc being built in a very small unincorporated area of D.S.]
- increased traffic - very concerned
- Water - EID - where is it coming from?
- We have very little infrastructure in D.S. How will the County cope w/ ~~#~~ 1,000+ people + Cars moving to D.S.?
- Fire, police, emergency - we have little to none on police & our fire Dept has only 2 engines
- Schools? ~~Is~~ this being discussed now?
- Will Fowler lane be widened?
- Personally, I feel the project is too large for our area.
- How will people get insurance. National ins. Companies are not renewing policies. What will the new residents do?
- Concerned about increase in General Plan density ratio per acre for R1 & RM.
- Possible endangered species in area of development "the red legged frog"

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Reannet Eric Johnson

Address: 1010 Wrangler Rd Diamond Springs, Ca 95619

Email: Johnse@SBCglobal.net

We need a city park instead of a giant housing project.

Between the Figures 7A-C for realigning the road, we much prefer 7A

H & G St need a way to get from fire.

High density at begining of faith lane will congest entire project.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: DIANE PRIMIERIO **Address:** 4561 VINTAGE LANE
PLACERVILLE, CALIFORNIA

Email: diprimo@pacbell.net

WE THE TAXPAYERS OF EL DORADO COUNTY DO NOT AGREE WITH THIS PROJECT! WE ARE NOT AGAINST GROWTH, BUT THIS PLAN MAKES NO SENSE AT ALL. OUR MAIN CONCERN IS TRAFFIC. WE ACREADY HAVE MAJOR TRAFFIC ISSUES AND THE POSSIBILITY OF OVER 10000+ CARS IS NOT ACCEPTABLE!

THIS PROJECT INTRUDES ON MANY WHO RESIDE HERE, BUT ALSO ON ANYONE WHO TRAVELS DOWN THE HILL FROM GRIZZLY FLAT, SOMERSET AND OTHER AREAS. THERE ARE ALTERNATIVE OPTIONS THAT CAN BE DESIGNED THAT WOULD NOT TEAR THE SMALL COMMUNITY OF DIAMOND SPRINGS APART. A TRAFFIC LIGHT WOULD BE RIDICOLOUS - ROUNDABOUTS MAY WORK IN SOME PLACES BUT DON'T SEE IT WORKING HERE.

WHAT HAPPENED TO THE MISSION OF THE PLANNING DEPARTMENT BEING CONSISTENT WITH THE GENERAL PLAN? HOW WILL THIS MAINTAIN OUR UNIQUE QUALITY OF LIFE? AND WHAT ABOUT PUBLIC SAFETY? WHAT ABOUT MEASURE E?

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Bobby Ratkowski **Address:**

Email: Bobbyrat1972@gmail.com

TRAFFIC + EMERGENCY EVACUATION IS A CONCERN.
PUBLIC NEEDS TO SEE TRAFFIC IMPACT STUDY

SMALL TOWN OF DIAMOND SPRINGS DESERVES TO BE MAINTAINED

I AM STRONGLY AGAINST THIS DEVELOPMENT

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: TOM DAKED

Address: 1161 HEARTLAND RD. PLACERVILLE

Email: GLIDESTER05@GMAIL.COM

MEETING WAS ONLY HELD TO SATISFY REQUIREMENTS FOR EIR. NOBODY HAS ANY INFORMATION PERTAINING TO THE ACTUAL PROJECT. WASTE OF TIME

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: RUSK

Address: 4261 LIME KILN

Email: rusk@gmjair.com

WATER

TRAFFIC

Take away our HISTORY

FIRE HS

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Marsha Freese **Address:** 4460 Canyon Valley Rd. Rio. S.

Email: Linkotree1@gmail.com

I am concerned of fire fires in this area and Paradise, we need to revise the Co. GP Poor old ED co. can not ~~handle~~ handle all this development.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: **Address:**

Email:

Big waste of my time!
GP Not Valid -
I do not recognize it.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: D. STOVALL **Address:** 194 ARGONAUT DR

Email: ZOOKEEPURRR@COMCAST.NET

WHY CANT YOU DEVELOP YOUR OWN INFRASTRUCTURE ALONG THRU TULLIS MINE RD STOPPING AT JUSTINE - VEER LEFT AND PUT YOUR OWN Rd BEHIND ALL HOUSES ON JUSTINE THRU ARGONAUT BY PASSING OUR STREETS!! ITS DOABLE BUT I SUPPOSE YOU ALREADY KNOW THIS, ITS ~~MAY~~ COST YOU MORE BUT IT IS YOUR DEVELOPMENT USE YOUR OWN INFRASTRUCTER NOT OURS!!

WE DONT WANT YOUR TRAFFIC, SMOG AND DANGER TO OUR NEIGHBORHOOD WE ARE A QUIET COMMUNITY AND THATS WHY WE PURCHASED OUR HOME ~~#~~HERE.

ALL YOU CARE ABOUT IS YOUR BOHOM LINE $$. SPEND A LITE AND GET LESS ANIMOSITY FOR YOU AND THE PEOPLE WHO UNKNOWINGLY BY YOUR DISASTER TO AN ANGRY NEIGHBORHOOD. OUR SAFETY AND HEALTH ARE IN JEOPARDY BECAUSE OF YOUR GREED!! BY GOD DO WHAT'S RIGHT NOT FOR MONEY BUT FOR ~~CC~~ HUMAITY AND WILDLIFE.

P.S. WHO IN THE PLANNING COMMISSION DID YOU PAYOFF TO APPROVE THIS USE OF OUR STREETS

C.C. SELF, DEER PARK ADVOCATES

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Karen Heil **Address:** 441 Cappella Dr. D.S. 95619

Email: kheil@comcast.net

I moved up to this area 31 years ago only because of its history, rural living, and quaint ways. I totally oppose this building in my area! You people have no concern or care for the residents of this County - only what will fill your pockets. If you want to do all this building including stupid round abouts - go out of our County. I work in Tone and that round-a-bout in Plymouth is a nightmare on weekends! It will totally take away from our historic look that draws so many people here. I used to love living here and inviting people to come and visit! Now, you want to turn Diamond Springs into Folsom! No!! The traffic on Missouri Flat is a nightmare now and will only get worse. If you don't like our county the way it is — Leave

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Adriana DePersia
Justin Mullican

Address: 4533 Crown Point Dr. Diamond Springs.

Email: andepersia@gmail.com

Don't do it. ** This would displace wildlife. Deer are seen in this area on a regular basis. They're already wandering the neighborhoods searching for food. Just a few days ago there was 2 bucks in my front yard & another walking down the road. We bought our home a year ago and one of the biggest draws was the open space behind the property This development will increase the population density in our resource limited county. It will also increase traffic. Having this development behind our home will push us out of the county. I'm a Public Health Nurse for El Dorado Community Hubs. It is next to impossible to recruit/retain Public Health Nurses in our county. I don't want to be forced to leave. The land owner Kevin Sweeney does not even live in Eldorado County. As a life long resident of Eldorado county it is very upsetting to see big land developers come in and destroy this beautiful county. If this development plan was brought out to the whole community of Eldorado county (not just town limits) you would have an outpour of the county community NOT wanting this development built. Eldorado county has been known for rural living and we want to keep it that way. This is nothing more than a money maker for the land owner and a burden to local residents to deal with.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Sally Bishop **Address:**

Email: sa_bishop@Yahoo.Com

This meeting was a joke and waste of time

Divide and Conquer!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: CAROLYN ANDREWS

Address: 2047 NO NAME LANE
DIAMOND SPRINGS

Email:

TRAFFIC HAS INCREASED TREMENDOUSLY OVER THE PAST 10 YEARS I LIVE 2 MILES UP PLEASANT VALLEY ROAD FOR 14 YEARS. IF THIS IS PROGRESS I DON'T WANT IT THERE IS LOTS OF VACANT LAND THAT COULD BE UTILIZED WITHOUT IMPACTING DIAMOND SPRINGS

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Marsha Frees **Address:** 4460 Canyon Valley Rd. Dia. S.

Email: Linkatree1@gmail.com

Please address how many mature oak trees will be removed, what is the mitigation? How will it conflict with the new fire safe setback requirements?

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Yesenia Segura **Address:**

Email:

I vote for Alternative C - we dont want Debis Frosty to be destroy.
I've been working there for years.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: MARLENE GRALICER **Address:** 4441 FOWLER LANE DS

Email: MARLENE1042@YAHOO.COM

* THIS IS A BAD IDEA.
* IT IMPACTS WATER
* THE ROADS ARE ALREADY TOO BUSY NEW ROADS WON'T HELP THE TRAFFIC DELAYS
* IT WILL BRING CRIME WHICH IS ALREADY OUT OF CONTROL
* IT WILL IMPACT OUR PRIVACY
* THE ANIMALS WILL BE DISPLACED
* IT WILL IMPACT THE SCHOOLS
* IT WILL MEAN HIGHER TAXES TO RETIREES TO PAY FOR BONDS FOR SCHOOLS

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Barbara Luther **Address:**

Email:

bluther@comcast.net 3552 China Garden Rd Ste 0 Pinole

My concerns are traffic, water, where are they going work. What about our schools.

Even then I won't be around in 5 year it will effect the value of My mobilehome.

How are you going to get Bonds to build more schools

People are tired of being taxed to death.

You should at least have chairs for people you have many Senior Citizen here. This is very inconsedor.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Patti Wooldridge

Address: Lake Oaks Mobile home park
Impaction!

Email:

What a waste of time this meeting was! It's obviously all "cut and dried", and nothing anyone says will change anyone's mind about more development in this county - regardless of the impact on water available, and regardless of impact on traffic on roads? NUTS!

Thank God I'm too old to see this come to pass!

91 year old Patti Wooldridge

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Kathy Warden **Address:** 501 Newman, Diamond Springs, CA 95619

Email: Kathy@ccpville.com

We(I) live at the intersection of Fowler Ln and Newman Street, approximately 1/10 mile from Pleasant Valley Road. The road is narrow and people already drive too fast. Traffic is moderate right now but it cannot support more traffic. I walk on Fowler and it is already dangerous. I am totally against traffic on Fowler into the subdivision.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

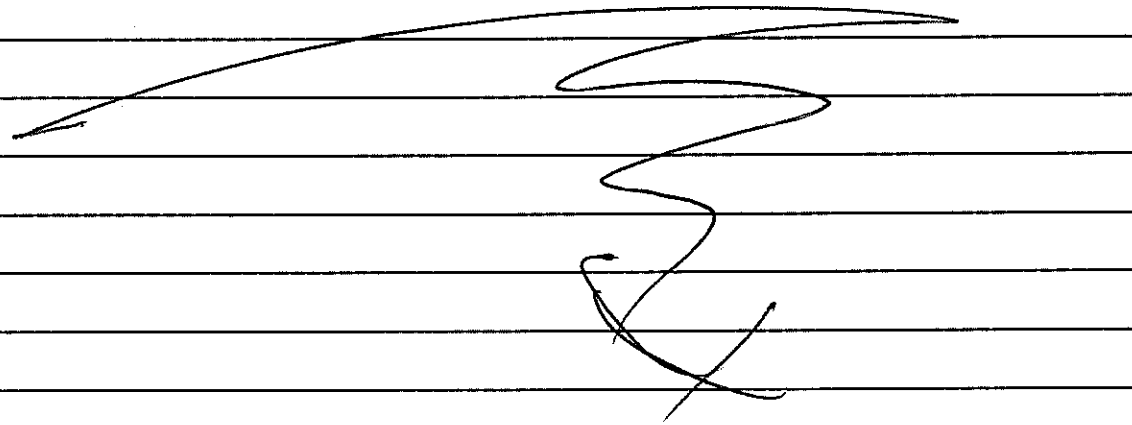
Date: August 20, 2019

Name: **Address:**

Email:

I've lived here for 58 years & take pride in our small town. This is not a good idea!

Stop this Development



For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Linda Azevedo

Address: 2540 Los Cerros DR, Placerville

Email: lindawazevedo@gmail.com

I respect that this was planned for in the GP however my concern is for fire protection. Much has changed since the GP. Diamond Springs, the Oak Hill area... perhaps the whole county already has inadequate fire prevention. Chiefs aren't able to drive their streets and DOT isn't able to clear evac. routes. We need many more evac routes in this county before higher density.

Thank you for listening - Linda

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Estefany Gonzalez Salvador Gonzalez

Address: Debs Frosty 460 pleasant valley Rd

Email:

Alternative C - Im the Boss at Debs Frosty and it would be a shame to see it destroy! Its been 15 years working and its our only business. We have children in school and in College.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Tim Ahrens

Address: PO Box 3190
Diamond Springs, CA 95619

Email:

Keep D.S. a small village

Please

do not ruin it

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Tracie A.

Address: Po Box 1052
Diamond Springs CA 95619

Email:

No on Project

go away

Thank You

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Marsha Freese **Address:**

Email: Linkontree1@gmail.com

I am concerned about traffic congestion on MFR going to HWY 50

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Hilary Krogh **Address:** P.O. Box 3117, Diamond Springs, CA 95619

Email: hilaryd73@gmail.com

Safety / traffic

C Street should NOT connect to Fowler Lane on the northeast side of the project.

- Currently South Point Rd (as well as homes on other streets off of South Point only have one egress (Fowler) out to SR 49/ Pleasant Valley Rd. Many safety, traffic & air quality issues.
- Fire hazard for all residents to evacuate in the event of a fire ~~to~~ the South (as the ~~current~~ recent August fire near us) *
- ~~The~~ Current residents would experience ~~a~~ a LOS lower due to high density traffic access to Fowler Lane. Safety issue for children/families.

Connect D Street with SR 49 as a 3rd way out for New housing

- Alternative route for Dorado Oaks (See suggestions by Hoot Owl Properties, Pleasant Valley Property Investments Michael A Goodis, DDS.) This is only a Suggested Alternative.

* See August 15/16 Fire location which was only a few miles from South Point Rd. (NOT a through street). ~~Traffic~~ access out is South Point to Fowler Lane. South Point ~~needs~~ Rd ~~other egress/ingress~~ should NOT be blocked by Traffic from high density residential.

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Marsha Fuess **Address:** 4460 Canyon Valley Rd. Dia. 5.

Email: Linkatree1@gmail.com

Traffic report should address the problem of the proposed roundabouts being too close to the "T" intersection of HWY 49 and MFR.

Please consider updating the current GP and zoning. El Dorado Co. can not handle all the proposals. Recent issues are fire safety environmental/climate change issues, which were not issues at the time the GP was created.

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Dana Merritt

Address: 550 Cappella Drive DS

Email: Mom4Cods@yahoo.com

I want my voice heard about being against this project.

I move here from Silicon Valley a few years ago to find a nice quiet community. I do not want my grandkids to grow up in a congested community. I understand your transportation ideas, but the amount of people with the apartments and homes means more cars, etc. Restaurants will be crowded, roads, schools, hospitals, etc. will all be negatively affected. I moved to San Jose in the 60's and I watched how overcrowding destroyed the community.

I do not want our small town overcrowded.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: CASS ; STEPHEN, JAMES, KATHLEEN **Address:** 169 ARGONAUT DR.

Email: bhsmcus@comcast.net

IF YOU THINK THAT WE ARE JUST GOING TO TAKE THE TRAFFIC FROM YOUR SLUM, YOU HAVE ANOTHER THING COMING.
IF YOU WANT ANY START OF NEGOTIATION INSTEAD OF PROTEST, FIRE GATES WILL SEPERATE YOUR SLUM ROADS FROM OUR COMMUNITY! ARGONAUT WILL NOT BE A MAIN ACCESS THRU ROAD. KIDS PLAY ON OUR STREETS! PETS ROAM OUR STREETS. PEOPLE WALK AND ENJOY NATURE ON OUR STREETS! WE DO NOT HAVE ISSUES WITH LOTS OF PEOPLE ENDANGERING US ALL DAY OR KEEPING US UP AT NIGHT WITH CONSTANT TRAFFIC FLOW! EVERYONE KNOWS YOUR BYPASS WILL FAIL TO DO WHAT U HOPE AND THE PEOPLE WHO FALL INTO YOUR SLUM WILL WANT TO USE OUR STREET ALL THE TIME IF NOT STOPPED! THAT'S JUST THE PRACTICAL.
ON THE PERSONAL, WE LOVE OUR NATURE! WE LIVE IN DEER PARK! CAN YOU PROMISE THAT BY DESTROYING THEIR HABITATE, THAT OUR NAME DEER PARK, WON'T BE SYNICAL IRONY? AND WHAT ABOUT THE INCREASE IN CRIME! THAT MANY APPARTMENTS WILL BRING IN MORE CRIME THAN LAW ABIDING CITIZENS.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Susan Keale **Address:** 4544 Founders La, Placerville, CA 95667

Email: sbk317@yahoo.com

(1) Traffic is already impacted during commuter times. What mitigation will be provided to make sure that traffic doesn't get worse?

(2) Fire Safety: How will you ensure that densely populated area will have adequate evacuation routes?

(3) Historical Character: How will maintain the historical character with a project more suited for the suburbs?

(4) Alternative Uses for Property: El Dorado County lacks regional parks & recreation areas near population centers. Perhaps the County would be better served by a regional park. Where are the parks?

(5) Water: Has water been allocated for this project?

(6) Indigenous Cultural Heritage: How will the burial grounds & other cultural sites be preserved?

(7) Roundabout: Are incompatable for pedestrians & are inappropriate in a gold town setting.

(8) Crime: Are taxpayers expected to foot the bill for the extra deputies that will come with the additional crime generated by the additional population?

(9) Meeting for Board of Supervisor - a lot of confusion and lack of explination at meeting

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Susan Keale **Address:** 4544 Founders Ln. Placerville, CA 95667

Email: 56k317@yahoo.com

(10) Planners: My understanding was that this meeting was to solicit comments for the EIR

(11) Wild Life Migration: Have migratory patterns been sufficiently studied?

(12) Alternate exit route on other side of mobil home park on other side of Missouri Flat.

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: J. Hickman **Address:** 4544 Founders Ln. Placerville,

Email: VFR95VFR

(1) How will traffic flow not worsen with this project?
(2) What will keep this area from becoming a fire trap during a fire?
(3) How will the historical character of Diamond Springs be preserved?
(4) Why are no parks included with this project?
(5) El Dorado County needs regional parks. Has this area been considered for a park
(6) Water is in short supply in EDC. Has water been allocated?
(7) Have the indigenous burial grounds and villages been surveyed mapped?
(8) Roundabouts are not in character in gold country towns. traffic
they are dangerous for pedestrians due to increased speed of
How will pedestrians safely cross Pleasant Valley?
(9) How much more crime will be generated by the additional population?
(10) Have wildlife migration patterns been studied/documented?

(11) This meeting was very confusing and poorly run. The stated purpose was to collect public comments for the EIR. The EIR was never explained during the meeting. How can the public make relevant comments if they do not fully understand why the comments are being requested?

(12) Have other connector roads to Pleasant Valley been considered? Having the main exit in downtown Diamond Springs is wrong.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Terry TAWNEY

Address: 4980 Tullis Mine Rd, Diamond Springs

Email: tawney@innercite.com

1) A full (Rural) county standard Road from the east end of Antares Dr Through To Fowler Ln. For everyday Traffic flow and Fire in/out. not "Pretend" one lane gravel "emergency only" gated Road.

2) SR49 intersection: Alternative 'C' with signals on China Garden, Pleasant Valley And Faith Lane. The signals can function as if China Garden and Faith Lane Act as a single cross street with Pleasant Valley Rd.

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Paytin Thrift **Address:** 523 Fowler Lane

Email: paytinthrift@comcast.net

I'm not against developing, but I'm very much against these plans. How on earth do you expect little town Diamond Springs to accomodate such high density housing? First off, where will all these people work? Kids go to school? Outlets for kids to have fun is get in trouble? It already took me 30 min in normal commute traffic to get home from Safeway. Then lets be real- apartments= no jobs = welfare. This many people will only increase our crime rate / risk. And if a fire came through the canyon? Our roads cannot accomodate the congestion a panic would cause; they're too narrow with limited exits. Living at the bottom of Fowler, I really worry about having to evacuate with horses on an already risky road with limited arteries. Plus, that could easily be that many more people displaced.

I honestly believe these plans would only change D.S. for the worst and drive many residents out.

So- picture this: 5 acre lots, nice family homes, rural lifestyle, higher property values (higher property taxes). Much like Cameron Estates. Or even just larger lots / family properties like Fowler lane already is- nothing fancy. Now THAT is something I could get behind. Or better yet, turning it into a working multi purpose ranch. That has always been my ultimate dream for the property if I could get the backing & support.

Thank you for reading & I hope this brings some perspective.

For questions, please contact: michelle@mmsstrategies.com

5

If you add parks- I have a lot of ideas

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Ashlyn Thrift **Address:** 523 Fowler Lane

Email: ashlynthrift@comcast.net

If you're planning on developing the field, why would you fill it with low-income apartments instead of a place more like Cameron Estates? How do you expect for this town to accomodate this many people? Our schools will be overloaded and you'll lose funding for absolutely everything we would have. Why not make this a place to have this tournament can have fun? Have you thought about what this will do to today's youth? Everyone will see that it's okay to move into welfare filled houses. Have you thought about everything that will happen to the residents about how home? If you take this away from us then me, and a lot of other people's memories will be tarnished forever. Do you really think that there's enough jobs for everyone around here? If you provide this housing then they'll never want to work because they think it'll be okay. My entire family has lived here for over 50 years, and they've never seen anything so ridiculous as this. Anyways, how was this allowed legally? In conclusion, if this happens, my entire memory of Diamond Springs will be tainted. Congratulations.

For questions, please contact: michelle@mmsstrategies.com

15th Amendment ?!

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Morales **Address:** 209 Justice Court

Email: green_coqui@yahoo.com

Where was the Initial Study on Flow Chart for Residents to Review?

We want to come in to talk about Draft of EIR

Env. water supply & congestion will be major Impact

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Michelle Hansen

Address: 540 Shady Oak Lane
Diamond Springs, Ca - 95619

Email: MichelleH2294@Yahoo.com

This massive proposal has not taken the established neighborhoods into consideration at all.

This is complete Encroachment and Invasion into our town.

This project doesn't benefit anybody who lives here.

"There Goes Our Quality of Life"

Stop The Development!!!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Michelle Hansen

Email: Michelle#2294@Yahoo.com

Address: 540 Shady Oak Lane
Diamond Springs, Ca 95619

This project is on land that has Miwok Indian Burial grounds, Grinding Stones, Wetlands, a pond and alot of wildlife.

All this high density buildings will completely destroy our small, rural, historical town of Diamond Springs.

None of the residents in Diamond Springs want this project. Take it somewhere else!!!

This project will Destroy Our Quality Of Life!!!

This project will add at least 1200 more cars, this creates traffic chaos. Its also a Major Fire Hazard.

The people that live here enjoy what we have. Don't Destroy It

The infrastructure cannot handle all this massive building.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Sue Taylor **Address:**

Email: Sue-Taylor@comcast.net

All CEQA Elements need to ~~conducted~~ analized being this is such a large impact to Diamond Springs - Transportation, Aesthesics, Air Quality, Hydrology, etc.

All elements of traffic capacity need to be analyized. Missouri Flat Interchange is already over capacity. How is mitigation being prepared for that? How much of Pleasant Valley Road will be impacted? Is the developer going to be required to address the impact to Pleasant Valley and the interchange?

Having the public comment on the NOP causes confusion when it is time to comment on CEQA studies. I expect the County to make it clear the importance of every comment period.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Jeanne Cardwell **Address:** 103 Lone Star Ct Diamond Springs, CA 95619

Email: jrezabek1011@yahoo.com

This project will lessen the quality of life in this area of El Dorado. Several reason why:

1. This is no longer a rural community, it is akin to suburdea & all of their problems.
2. Will the county allow EDSO to hire more deputies to service this project, you know (statistically & logically) the crime rate will increase. One reason there is nothing for teenagers to do.
3. Property values will decrease. We are thinking of selling our home in a couple of years, now we must consider expediting the sale before this housing project commences
4. Schools - any thought to purchase of land to build new school K-12? Take schools decommissioned & upgrade (@ great cost)
5. Fire events. Thousands of folks in a ~~Paradise~~ paradise like fire event are directly affects all residents of D.S
6. Roundabouts - We know Caltrans has say. But they are UNACCEPTABLE for many reasons. Adds insult to injury
7. I will Email you later with more detail

Please email & postal ~~notify~~ notify us w/next meeting

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Sara Morgan **Address:** 4404 Cast Boy Rd. D.S.

Email: sarabutterfly999@yahoo.com

I'm very disappointed that there was no presentation followed w/ Q+A! No "initial study"! Where are we getting all the H_2O for these homes? Where is all the wildlife going? (into our yards - esp. rodents!) This is going to ruin the quaint flavor of our community. Don't do it! If anything, make it a park +/or golf course... We already curtail our water useage to the max. We can't use less. It also looks like another "Paradise Fire" waiting to happen. Leave our community alone! Or at least be more responsible, conservative + follow protocals! There will be lawsuits if you don't.

By the way, please consider all the toxins in the soil + grandwater from all the illegal dumping the idiots have done over the years. Its not fit for children + pets without major clean-up.

DO NOT remove the Historic landmarks + Deb's Frosty!

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Rosemarie Taylor **Address:** 461 Pleasant Valley Rd

Email: jrlaa@directcon.net

I would like to be in the loop of this project - the Red line on the North side of Pleasant Valley Rd goes right thru my property & house.

It will be 100 yrs old in 5 years & was built by the Davenport family who owned the sawmill in Pleasant Valley

There are 4 bodies buried in my yard 3 of the Carpenter family with a grave stone & one without a marker.

I have lived here for 31 years - my kids grew up here - we moved there when we were 39 and are now 73. -

my number is 530-417-1546

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Wendy Vick
Email: SWranch@sbcglobal.net
Address: 1071 Calico Mine Rd
Diamond Springs CA 95619

* Traffic and Safety - Fire Escape plans
Making Argonaut through - what is the impact on Patterson Drive.

* Fate of iconic Deb's Frosty and Old Brick Building

* Price of all housing plans - a lot of talk about "affordable housing" but will it really be??

* What types of "multi-family" ~~units~~ are planned duplex/4plex townhouses/condos
types of apartments -
How much Section 8

* True # of people expected

* Please provide a better visual of proposed structures

* Availability of water to accommodate

* Impact on Schools

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: DR. RICHARD BOYLAN

Address: 6731 JUNIPER LANE PLACERVILLE 95667 (Diamond Springs)

Email: DRBOYLAN@OUTLOOK.COM

This project is inappropriately vastly oversized. We in Diamond Springs do not want to become a junior El Dorado Hills. The project is too large, too dense, badly designed, lacks necessary circulation & road and traffic capacity. It would devastate the existing oak woodlands, and damage the Martinez Creek Watershed it encroaches on. Even that the Martinez Creek canyon is identified by Diamond Fire District as one of the primary fire corridors that a wildfire would come up from the Cosumnes River through this area and into Diamond Springs. We've already had a significant fire in this area and the next one could become much larger. The project will create a traffic bottleneck at Faith Lane - Pleasant Valley Road intersection. We were promised a park at this location and there is none shown on the map. There a wetlands and ponds here which would get plowed over and disappear and harm Martinez Creek's water supply.

The people of Diamond Springs rejected an equivalent proposal 10 years ago, and here it is back again.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Tiffany Bishop **Address:** 4257 Howard Circle Diamond Springs

Email: tiffseibold@outlook.com

-I oppose this project completely! 1st Diamond Springs is a small rual community and doesn't need more people! I thought the parkway was being built to elivate the traffic through D.S. main st. How can we know the enviromental impact if we haven't even seen what the outcome of the parkway will be. I can't rember the website but there is a site somewhere that states all the old mines of El Dorado County, and from that I believe there has been at Least 1 mine (I believe I have seen what looks to be a collapsed mine shaft) - also I thought the orgina reason the development was shut down - was because of an endangered species of a frog or bird (some that was spotted) I can't remember. Also the parkling lot that starts Faith ln. - is where the swap meet happens every Sunday for past 15yrs. One of my favorite things living in D.S!

I think the way this meeting was conducted was a joke. - a good way to make sure no one knows whats going on! If the project is going to happen go with the plan proposed by Dr. Goodis. - I agree with the alternative route that he suggests. ~~which~~ which would bypass the heart of D.S.

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Dawn Hilton
Email: hiltonestes@sbcglobal.net
Address: PO Box 1921
Diamond Springs, CA 95619

It's bullshit. No tables to write and no pens!

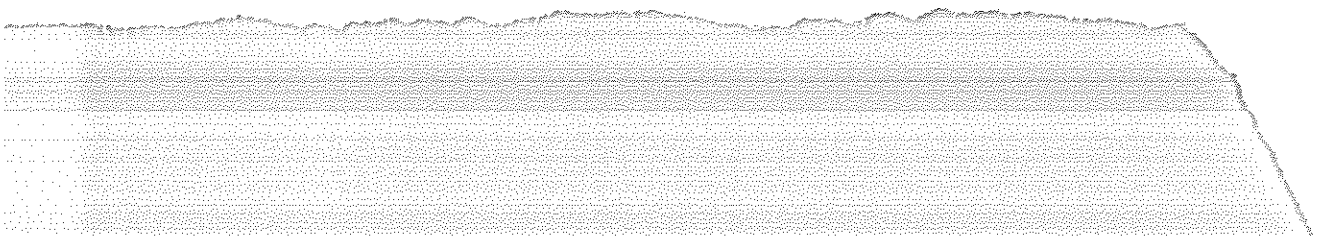
Do you really want to hear from us???

2 mins of an intro and no time for us to share.

I am very disappointed. Please let me know when you have a real meeting!

I absolutley abhor this idea. Please do not destroy our quaint town.

Go spend your money somewhere else!



Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Nancy Ehrlich

Address: 4450 Ruffy Ln
El Dorado, Ca 95623

Email: nan3jake@internet49.com

I own 540 Main and have trouble now getting Tenants out of Back Parking Lot. With more Trafic I will lose Tenants and That stops My Income

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: BOB & CATHY SEVERIN **Address:** 3415 SUNCREST DR, PLACERVILLE CA 95667

Email: bobbseverin@gmail.com

WE JUST MOVED TO PLACERVILLE FROM SAN JOSE

THIS DEVELOPMENT MAY MAKE THE TRAFFIC GET AS BAD AS IT IS THERE!

WE MET NEW FRENDS @ DEBS DRIVE-IN, WHO MAYBE FORCED OUT OF BUSINESS.

THE EXTREME EMPHASIS ON "HIGH DENSITY" WOULD CREATE AN AREA WE WOULD NOT BE INTERESTED IN LIVING IN OR NEAR.

WHERE ELSE IN THE COUNTY IS SUCH A HIGH DENSITY DEVELOPMENT BEING PLANNED?

For questions, please contact: michelle@mmsstrategies.com

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: **Address:**

Email:

Mitch Goodis MAGoodisDDS@gmail.com

For questions, please contact: michelle@mmsstrategies.com

From: Hoot Owl Properties, Pleasant Valley Property Investment, Mitchell A. Goodis, DDS, Inc, & Diamond Springs Dental

To: Tom Purciel, Associate Planner, El Dorado Co. Board of Supervisors

Re: Dorado Oaks Subdivision 18 August 2019

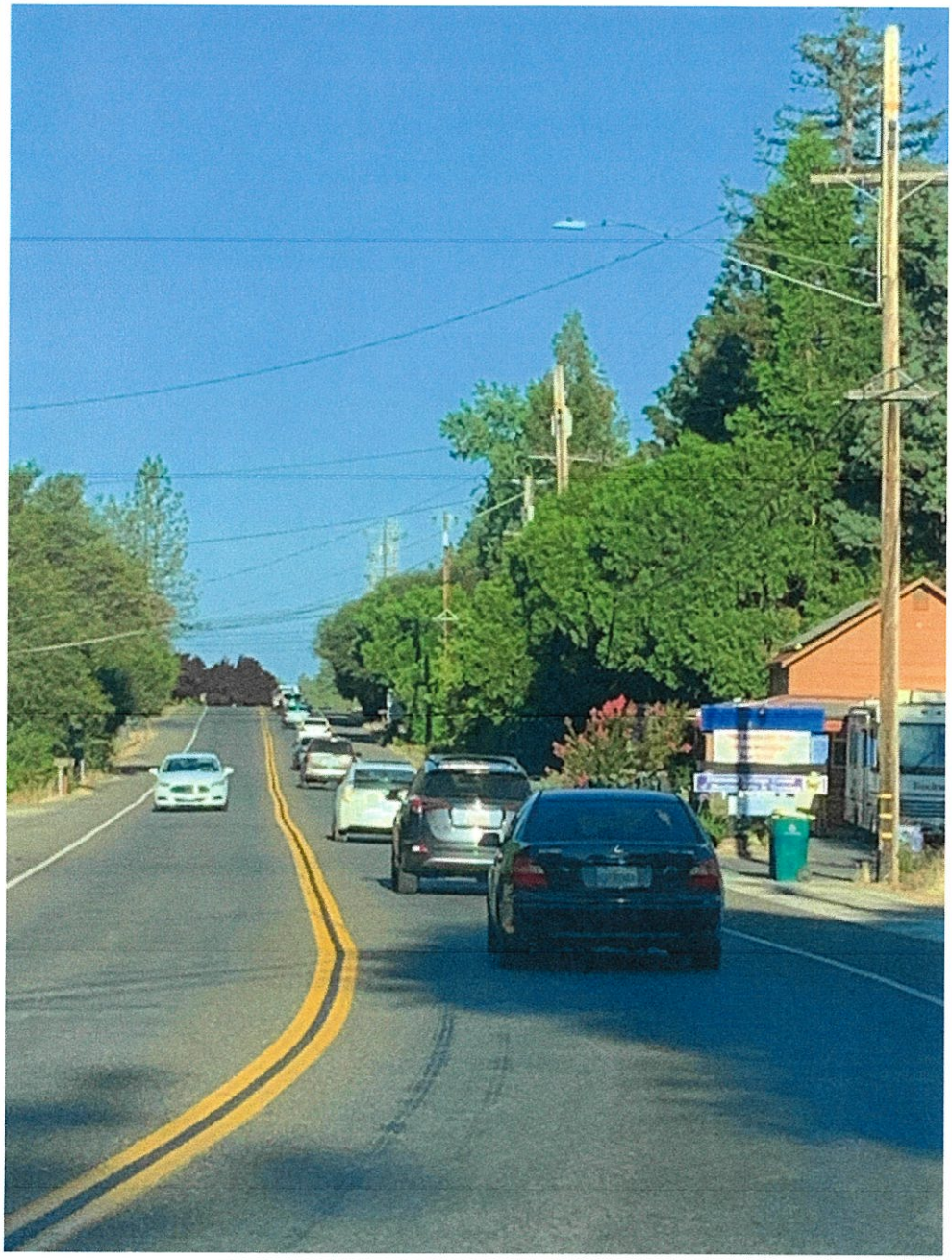
I have thoroughly reviewed the subdivision Map for the Dorado Oaks Project

Here are my comments, first on **current road conditions**:

- Traffic through Diamond Springs in the AM and PM from 7 till 9 and 4 – 6 is extremely congested. The rest of the time, it is horribly congested until evening hours.
- Diamond Springs hosts a small, poorly maintained two lane road, receiving traffic from Placerville area, as well as Pleasant Valley, Somerset, Grizzly Flat, Leoni Meadows, Fairplay, and surrounding areas.
- Most of the traffic feeds to Missouri Flat road if the drivers are headed to route 50 and West. Missouri Flat road is essentially a two lane road with a Suicide lane (turn lane) dividing the North and Southbound lanes. It, too, is jammed with traffic from approximately 7 am until 6 pm. The conditions worsen when schools are in session.
- Pleasant Valley Road heading West continues as a small, two lane road all the way to Route 50 in Shingle Springs. Traffic is severely congested and bottlenecked from Missouri Flat Road to Koki Lane during pre and post school hours due to Union Mine High School student traffic.



A monumental traffic jam: Entering Diamond Springs, Heading West on Pleasant Valley Road 7 am



The Daily Backup: East of Diamond Springs, Heading West on Pleasant Valley Road 7 am

The plan is to construct 156 single family units and 225 multi-family units.

I figure that will add 2 cars per family with an average of two working adults per family, most of whom will leave for work between 6 and 8 am and return between 4 and 6 pm. (not counting trips to Walmart and the nearby grocery stores) That puts approximately 1000+ cars on the road during those hours.

Additionally, there is another planned development on State Highway 49 across from the WMI Transfer station that will do the same thing. Most of those folks will not want to go down that curvy road to Placerville and will take the bypass (under construction) to Missouri Flat Road, which is already severely congested. And remember, there is another proposed development in the teeny town of El Dorado (off Koki Lane) that will, again, multiply the number of cars on Pleasant Valley Road.

Here are my comments on **Planned road conditions:**

- The plan to widen the road to two lanes each way for a very short distance is shortsighted and will create a bottleneck of biblical proportions for those folks from the Pleasant Valley area headed through Diamond Springs to reach Rt 50. Already there is severe congestion reaching back almost ½ mile each morning at the intersection of Pleasant Valley Road and Rt 49. Traffic comes to a standstill and moves forward at a snail's pace.
- Then, the bottleneck will worsen at the 'roundabout' as cars slow to allow 1200 folks from Dorado Oaks to enter Pleasant Valley Road. Almost all of them will be headed West.
- As they turn onto Missouri Flat Road, again, there will be a bottleneck as the two lane expansion now squeezes into one lane heading North to Rt 50.
- Additionally there is a High School almost directly across from the traffic circle, creating an additional bottleneck.
- Losing half of Diamond Center and Deb's Frosty (a town icon) to a traffic circle and an exit for this development will cut the heart out Diamond Springs. I eat lunch there!

Conclusion: The idea of allowing a development of this scope which will place over a thousand more vehicles onto small, unimproved country back roads without changing the Diamond Springs stretch of Rt 49 as well as the entire length of Missouri Flat Road into 2 lanes each way is shortsighted at best and a traffic congestion nightmare in the making at worst!

In the rush by the State of California to rezone and then fill every vacant lot with homes and families (as stated by the Governor), we are not considering the obvious: That the Planning Commission should first insist on proper infrastructure improvements. Or, at the least, connect the roads in a manner that there exists the basic four F's of Construction: FIT, FORM, FLOW, and FUNCTION!

A simple traffic circle and limited road widening is NOT THE ANSWER.

Not properly improving Missouri Flat Road from Rt 50 to Pleasant Valley Road and again from Koki Lane to Fowler Lane by making them all two lanes each way **PRIOR** to allowing this project to proceed is a big mistake that any and all of us commuters can clearly see.

THERE IS A BETTER SOLUTION:

A GOOD workable solution is to acquire a right-of-way from the planned D Street or Planned Development Lot B-3 Road, put in a two lane road across or bordering the undeveloped land that is zoned as HIGH DENSITY RESIDENTIAL West of Dorado Oaks and join Pleasant Valley Road (State Route 49) directly West of the Mobile Home Park, merging with Missouri Flat Road at or West of the traffic light. At that point, SR 49 is already widened to accommodate additional traffic.

More than likely, there is a development plan already in the works for the vacant land and a road exiting onto Pleasant Valley Road West that could be integrated into that project. (I realize its inevitability and we should take advantage of that! This is the time to be proactive!

Accordingly, the BETTER flow of traffic from Dorado Oaks would be to connect D street or from the planned development Lot B-3 Road to the existing road through the center of the mobile home park and exit directly at the traffic light on Missouri Flat Road. The flow of traffic would be smooth, controlled by the existing

traffic light. This would greatly benefit the residents of the Mobile Home Park having to make right or left turns, eliminating their need to merge onto Missouri Flat Road, cutting across 3 lanes of traffic to go West, and providing a traffic signal light to safely meter their exit.

Putting in a two lane access road across vacant land would be significantly less expensive than acquiring and demolishing buildings, building a large disruptive traffic circle and then putting in a road.

THE BEST alternative, especially during the construction phase, is to exit the traffic directly from Dorado Oaks onto Argonaut Drive and from there to Patterson Drive. This would be *the most cost effective alternative* , connecting to existing roads and metering the traffic onto Pleasant Valley Road via an existing traffic light. There would be no destruction of existing edifices, minimal impact on traffic in Diamond Springs, efficient use of existing roads, and a smooth flow of vehicles.

Following completion of the Dorado Oaks Project construction, any of the other three alternatives could be implemented and integrated into the development of the High Density area behind the Mobile Home Park. Any of these alternatives would be significantly better then cutting directly through Diamond Springs.

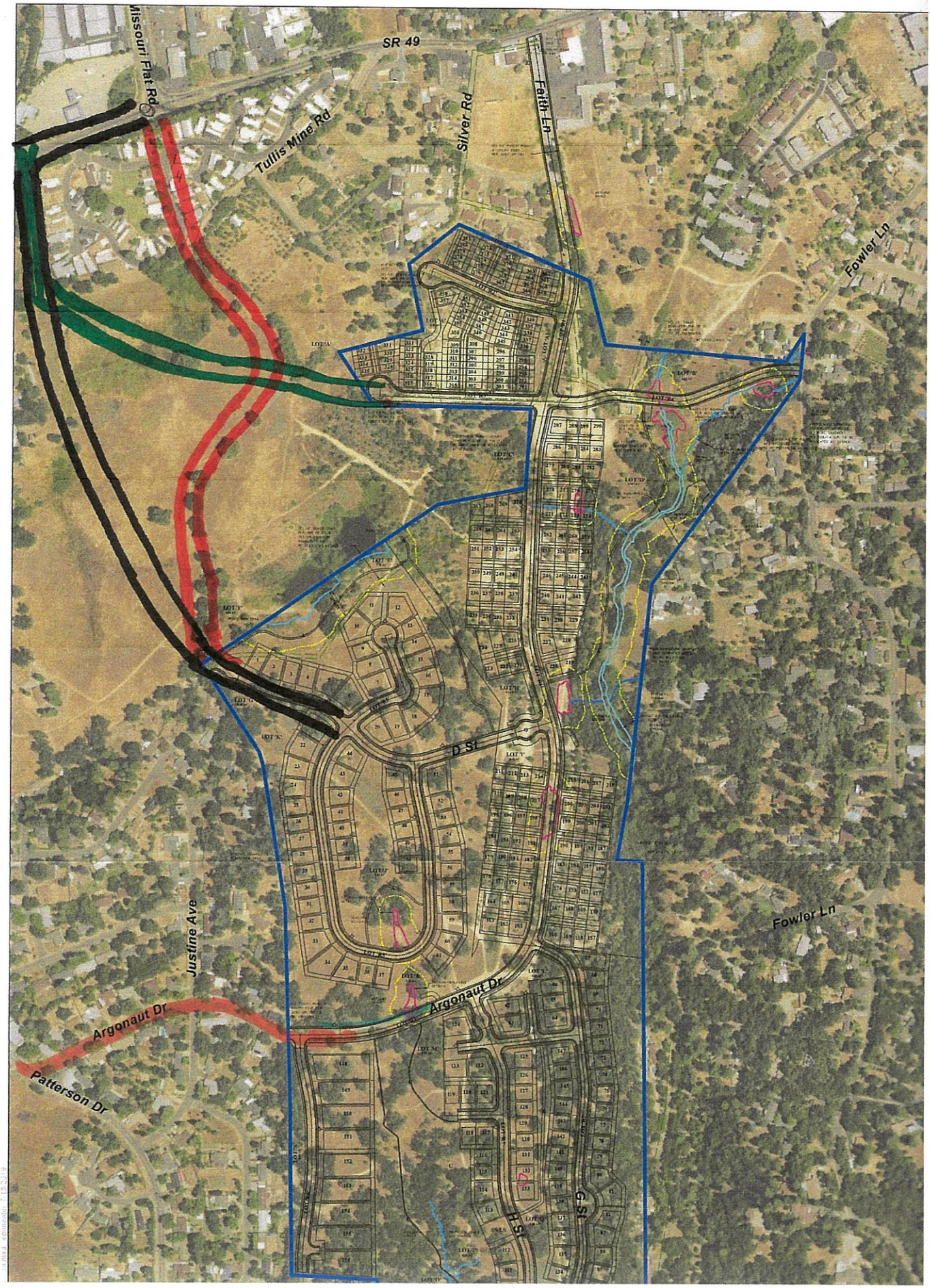
Please review the following Dorado Oaks Subdivision MAPS showing the planned development and FOUR alternatives to direct traffic with NO IMPACT on the current traffic flow through Diamond Springs.

See Attachment: Dorado Oaks Tenative Subdivision Map

I strongly encourage the planning commission and the Board of Supervisors to take action and develop an appropriate exit strategy for the planned residents of Dorado Oaks and future developments prior to construction being approved.

Mitchell A. Goodis, DDS

Lt Col, USAF, DC (ret)


SR 49
Missouri Flat Rd
Tullis Mine Rd
Silver Rd
Feith Ln
Fowler Ln
D St
Justine Ave
Argonaut Dr
Patterson Dr
H St
G St

Fw: Dorado Oaks Project

From: Bette Lasher (blasher1@sbcglobal.net)

To: dorado_oaks@edcgov.us

Cc: bosthree@edcgov.us

Date: Thursday, August 15, 2019, 12:11 PM PDT

Subject: Dorado Oaks Project

I have lived on the corner of Georges Alley and SR49 since 1977 and have seen the increase in traffic over the years so was delighted to see the much touted Parkway start as it has been talked about for decades.

However, was appalled at the enormity of the Dorado Oaks project unit wise. There is kill and over kill and this is over kill by a huge amount.

The speed in Diamond Springs on SR49 is posted at 25, for all the good that does as the average speed is 45 and from around 10 pm to 2 am at night it is a speedway from Missouri Flat to Fowler lane, now you propose more traffic. As to your proposed ingress/egress route on Faith Lane, a round about would be a disaster. A four way traffic signal with China Garden Road would be the best for traffic flow.

We already have several low income housing units in our little area, plus four mobile home parks, all but one is a senor park. Along with a quiet senior development on Panther Lane. Isn't this enough? 381 low income units is about 300 to many. The impact on the Union Mine High School area will be dramatic as traffic on Koki Lane is already horrid, plus there is project planned for there also.
The roads in these areas are not designed to accommodate heavy traffic. The commute times in Diamond Springs/El Dorado are already congested.

I am not sure if Diamond Spring/El Dorado has been designated as the area to dump all the low income housing mandated by Sacramento or not but his is totally unfair to the citizens of both areas. You are already proposing to re-zone 8 plus acres for this project, why not re-zone other lands around the county?

Where is the water coming from? We have been told to cut back to a bare minimum and now this. Who is paying for the highway part of the project? It seems like there is a movement to totally destroy the rural structure of Diamond Springs.

Yes, I will be at the meeting on the 20th.

Bette Lasher (Elizabeth)
3760 Georges Alley
Diamond Srings, CA 95619
530-622-9192
blasher1@sbcglobal.net

cc: District Three Supervisor

DIAMOND SPRINGS AND EL DORADO COMMUNITY ADVISORY COMMITTEE

Tom Purciel, Associate Planner
El Dorado Planning Services
2850 Fair Lane Ct
Placerville, CA 95667

Re: TM18-1538 – Dorado Oaks

Aug. 16, 2019

Dear Mr. Purciel

At our meeting of August 15,2019, our committee considered the subject development project for the purpose of providing comments regarding the scope of the EIR for the project, and received input from community members in attendance. Outlined below are the areas of concern that were identified during that discussion, and are items that we feel must be included for analysis within the scope of the environmental impact report:

- Of primary concern is the projects road circulation system, and whether or not it is consistent with the "Diamond Springs and El Dorado Area Mobility and Livable Community Plan". This study was produced in 2014 by the El Dorado County Transportation Commission, and among other things, concerns the traffic circulation system within the Diamond Springs and El Dorado Communities. A critical component of which is the Union Mine Road Connector, which is intended to provide parallel capacity to Pleasant Valley Road between Fowler Lane in Diamond Springs, and ultimately connect all the way to Hwy 49 south of the town of El Dorado. It is imperative that this project be consistent with that plan, and that its street system connect from Fowler Lane all the way to Patterson Drive via Argonaut Way in Deer Park, and that the streets be designed and constructed as relatively continuous collector streets. Because of the anticipated change in character of Argonaut Way from local street to minor collector, we feel that the traffic analysis should include the mitigation measure of incorporating concrete sidewalks on one/or both sides of Argonaut Way to facilitate pedestrian circulation.

- The recreation component of the EIR should analyze the feasibility of incorporating a continuous network of class 1 bike and pedestrian trails should be incorporated into open space areas of the project.
- Pleasant Valley Rd through downtown Diamond Springs is heavily congested, and at times it can be almost impossible to make a left turn onto that road from a side street or driveway encroachment. We think the traffic analysis must clearly address the reality of the congestion in Diamond Springs that the residents have to live with every day. The development of this project as proposed will make Pleasant Valley Road intolerable for existing residents, as well as the future residents of the project. The Committee members were generally supportive of the development of a roundabout at the intersection of Faith Lane and Pleasant Valley Road; however, we do recognize the need to align Faith Lane with China Garden Rd, and the potential that that creates to adversely impact an existing historical brick building. The analysis should investigate the possibility of creating a roundabout, or perhaps an "oval-about" that can help to alleviate traffic congestion without impacting historic buildings.
- The proposed multi-family units of the project are very dense, and it is not clear how adequate access to the units will be provided, both for normal ingress and egress, as well as access by emergency service providers. We request that the traffic analysis look at the project's internal street system and show how circulation will be provided to these units. The number of units should be reduced if necessary so that adequate access can be provided.
- The EIR should analyze the impact of this project on local recreation facilities. A project of this size must have an active recreation public park on the project, for the use of all local residents in order to mitigate it's impacts on existing recreation facilities.
- Wild fire safety is extremely important, and recent fires in the State and our community demonstrate just how vulnerable we all are. Projects such as Dorado Oaks throughout this county have been typically designed as "silos" that have limited connections to surrounding street systems to minimize objections from surrounding residents, and thereby increase the project's chances of approval. The problem with this strategy is that it creates extremely hazardous choke-points when evacuations become necessary in the event of a wildfire. We feel that the project as designed creates a hazardous situation during a wildfire, and that the EIR should analyze the internal street system, and determine the possibility of providing additional street connections to both Fowler lane, and the streets within the Deer Park Subdivision. These connections should be full, open, street intersections, and not gated emergency vehicle access points. Multiple avenues of escape from a wild fire have been proven to be critically important, and multiple road connections would enhance safety for all residents. This project should also have a comprehensive fire safe plan that includes vegetation thinning around the project perimeter.
- Many years ago, the Motherlode School District closed down Charles Brown Elementary School due to inadequate student load to justify its continued operation. The development of this project, together with other proposed residential projects within the Diamond Springs area could adversely impact the School District, and require the re-opening of Charles Brown School. This potential impact should be incorporated into the scope of the EIR. We would support the re-opening of the Charles Brown School because we feel that it is important for the children in the Diamond Springs/ El Dorado communities to have a school within their community that they can attend.

Thank you for the opportunity to provide input on the scope of the EIR for this project. We hereby request to receive a copy of the draft EIR, and written notification of any future meetings, or hearings, related to this project.

Sincerely,

Randy Pesses

Randy Pesses, Chairman

cc: Brian Veerkamp, District III Supervisor

To Whom it May Concern,

As contributing citizens to this community and it's economy, we have many concerns regarding the Dorado Oaks Development Project.

While we recognize and appreciate that growth is to be expected within any community, we strongly feel that it should be slow and steady, keeping pace with the infrastructure which that growth is so dependent on. At present, many of our roads are already over encumbered, our children's class sizes are at capacity and our law enforcement and emergency services are understaffed.

What impact will such a sudden population influx have on our water and electric resources? Do we have the necessary resources and infrastructure to accommodate the needs of such rapid expansion? How will these changes affect the quality of life for those who are already deeply ingrained within this community?

Those are the questions and concerns that we have concerning this project. We love this community and while we DO support healthy, measured growth, we also want to preserve the quality of life for those already living within it. Thank you.

Sincerely,
Stephanie Lee
530-344-6822
misszoey22@hotmail.com

Potential Law Enforcement and Academic Impact of Dorado Oaks Project:

Law Enforcement Staffing:

At the end of 2003, the El Dorado Sheriff's Office had 374 Full time employees with a population of 167,000. By the end of 2017, the population of El Dorado County had increased to 185,000 (18,000 more people) but staff levels stayed the same. Does our local economy allow for the hiring of more officers to accommodate the 1000 plus new citizens that this project will bring to our community?

Source:
https://www.mtdemocrat.com/news/local-crime-not-bad-but-more-staff-better-legislation-needed-sheriff-warns/

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Population average for Dorado Oaks Project:

156 Single Family Lots × Average family size of 3= 468 people
225 multi-family lots × Average family size of 3= 675

Total: 1,143 new residents (average)

If 1/3 of those are children, that's approximately 380 new children in our classrooms.

****

Academic Impact:

Schools impacted by Dorado Oaks Project:

Indian Creek Elementary: Aprox. 600 students with a 22/1 student teacher ratio.

Herbert Green: Aprox 470 students with a 21/1 student teacher ratio.

Union Mine: 1000 students with a
23/1 student teacher ratio

The national student teacher ratio is 16:1, placing our state/county at an already higher than average student teacher ratio.

According to Child Educational Services.net:

Studies have shown that K-3rd grade elementary students are proven to find the greatest amount of academic success with no more than an 18:1 student teacher ratio and the more years a student spends in reduced class sizes, the longer the benefits last.

Dumping approximately 400 new students into our local education system, which is already over encumbered, would almost certainly impact student's academic success and teacher's ability to provide adequate instruction unless more teaching staff is hired.

Sources:

https://www.niche.com/k12/search/best-public-elementary-schools/c/el-dorado-county-ca/

https://www.publicschoolreview.com/average-student-teacher-ratio-stats/national-data

https://www.ces-schools.net/important-student-teacher-ratio-students/

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

Name: Bruce Turner

Address: 4399 Wild Dew Court
Diamond Springs Ca 95619

Email: turner2000@yahoo.com

Two Pages.

For questions, please contact: michelle@mmsstrategies.com

To Tom Purciel Associate Planner, County of El Dorado

From: Bruce Turner homeowner, Diamond Springs.

Subject: Dorado Oak Subdivision NOP Scoping Meeting Comment Card

1. *El Dorado County has enough trouble maintaining roads in our county. Adding more traffic will only make the situation* worse and increase deferred road maintenance.

2. This development will add more than 10% to population of Diamond Springs putting pressure on water resources, waste disposal, and sewage.

3. This development will increase congestion on HWY 49 causing backups on Fowler Lane, Pleasant Valley Road, Missouri Flat Road, and Patterson Drive.

4. All road outlets from this development empty out onto Hwy. 49

5. The planned park in this development is too small. Minimal size should be 8 to 14 acres which should include a dog park, public pool, picnic tables, water park for kids, playground, soccer field, bathrooms and Soft Ball Field.

6. This development will also add to noise and air pollution.

7. And most importantly the lot sizes are too small. Each lot should be no less than one quarter to one half acre. That should be the minimal size of each house lot.

8. This development does not adhere to the Mission Statement of our

Planning Department which is:

Planning Services

Mission Statement

The mission of the Planning Department is to: Guide land use and development consistent with the General Plan, Building Codes and related regulations, by providing accurate, timely and courteous professional and technical services to our customers, **to maintain the County's unique quality of life, protect public safety and the environment** and to promote economic vitality for current and future generations.

MEL / TOM
LAND USE & ZONING

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: THERESA M. PUTHUFF **Address:** 154 ARGONAUT DR

Email: the_MOM530@yahoo.com

2019 AUG 29 AM 8:41
RECEIVED
PLANNING DEPARTMENT

For questions, please contact: michelle@mmsstrategies.com

LAND USE & ZONING

THE EXISTING GENERAL PLAN STATES THAT THERE WOULD BE ONE-TO FIVE DWELLINGS PER ACRE'. ALL OF US OUT HERE IN T.V. LAND DONT REALLY UNDERSTAND THE DIANAMICS OF WORDS LIKE: DENSITY, AIR-SPACE, MULTIPLEXES, ETC. WE DO KNOW, HOWEVER, THAT IT SOUNDS AS THOUGH THE POPULATION INCREASE, NOT ONLY FOR OUR ROAD, WHICH IS ALREADY A BAD SITUATION, BUT FOR EXAMPLE, OUR EDUCATION SYSTEMS (SCHOOLS) WHICH ARE ALREADY OVER CROWDED AS IT IS.

SOMEONE (RESIDENTIAL OWNER) HAS ALREADY CALCULATED THAT THERE WOULD, MORE THAN LIKELY, BE OVER 1000 MORE PEOPLE IF THE EXSTING "DORADO OAKS" PROJECT GOES THROUGH. HOW MANY RESIDENCE DO WE HAVE ALREADY? HOW MANY MORE CHILDREN WILL BE ATTENDING OUR SCHOOLS? PLUS WILL OUR PUBLIC SAFEITY BE COMPROMISED. OUR LAW ENFORCEMENT HAVE TO BE TAKEN INTO CONCIDERATION ALSO. MOST OF ELDORD CITY ARE PEOPLE

WHO CAME FROM THE BAY AREA, L.A. OR SACTO. WE ARE AWARE OF OVER-CROWDED COMMUNITIES.

IS THE WATER FOR OUR AREA BEING CONSIDERED? SOME OF OUR WATER BILLS ARE 200^{00} EVERY TWO MONTHES. WILL THAT INCREASE TO SUPPLY MORE HOUSING? IT JUST SEEMS THAT DIAMOND SPRINGS IS THE WRONG AREA TO DEVELOPE SUCH A MAJOR PROJECT. SO FEW PEOPLE ARE "FOR" THIS SUBDIVISION. SOME ARE SO AGAINST IT THAT THEY ARE CONSIDERING LOOKING TO ENDANGERED SPIECES.

BRIAN / MIKE

Dorado Oaks NOP Scoping Meeting Comment Card TRANSPORTATION + TRAFFIC

Date: August 20, 2019

Name: THERESA M. PUTHUFF **Address:** 154 ARGONAUT DR

Email: the_MOM530@yahoo.com

2019 AUG 29 AM 8:41
RECEIVED
PLANNING DEPARTMENT

For questions, please contact: michelle@mmsstrategies.com

TRANSPORTATION / TRAFFIC

THIS BEING ONE OF OUR BIGGEST CONCERNS DUE TO THE ENTERANCE + EXIT OF DEER PARK. THE ONLY SAFE WAY INTO AND OUT OF OUR AREA IS, OF COURSE, PATTERSON DR. THE OTHER MEANS IN + OUT IS ONLY TULLIS MINE WHICH IS NOT EXCESSABLE, ESPECIALLY DURING WINTER MONTHS, UNLES WITH 4 WHEEL DRIVE.

IF ARGONAUT DR IS GOING TO BE A MAIN THROUGHFARE FOR DORADO OAKS TO PATTERSON THE SAME ISSUES STILL REMAIN. IT IS .7 MILES FROM ARGONAUT TO PLEASANT VALLEY. IN 2013 THE FIRE DEPT CLOSED PATTERSON DUE TO A VERY LARGE FIRE. WE WERE EXACUATED + SENT DOWN TULLIS MINE WHICH WAS A TRAFFIC JAM AND ALMOST IMPASSABLE ON THE NARROW ROAD. AT A SNAILS PACE WE GOT OUT.

I'M WONDERING NOW, IF THIS GOES THROUGH, IF ARGONAUT WILL BE RESTORED TO A TWO LANE ROAD OR PERHAPS OTHER CHANGES TO DEAL WITH THE OBVISIOUS ON COMING + OUT GOING TRAFFIC -

THE OTHER TRANSPORTATION + TRAFFIC

ISSUE WE HAVE ARE THE "ROUND-ABOUT" LOCATION. BOTH OF THE OPTIONS ARE SO UNREASONABLE. DEB'S FROSTY IS NOT A HISTORICAL LANDMARK, AS IS THE OTHER LOCATION OFF CHINA GARDEN, BUT IT MINE AS WELL BE. IT SEEMS THOUGH, THAT NEITHER OPTION WOULD MAKE THE INCREASE IN TRAFFIC FLOW ANY EASIER. ALREADY PLEASANT VALLEY HAS SUCH A STREAM OF TRAFFIC COMING DOWN THE HILL THAT MOST PEOPLE HAVE TO TAKE SOME TIME JUST TO GET OUT OF THEIR DRIVE WAY. WE ARE TOTALLY AGAINST THE "ROUND ABOUT" AS A TRAFFIC SOLUTION.

Dorado Oaks NOP Scoping Meeting Comment Card

Date: August 20, 2019

CRAIG / KEVIN
PROJECT OVERVIEW

Name: THERESA PUETHUFF

Address: 154 ARGONAUT DR

Email: the_mom530@yahoo.com

2019 AUG 29 AM 8:41
RECEIVED
PLANNING DEPARTMENT

For questions, please contact: michelle@mmsstrategies.com

PROJECT OVERVIEW

ALL OF US, OR MOST OF US, ARE AWARE THAT ALL OF YOU IN CHARGE OF the PROJECT ARE REQUIRED BY LAW TO HAVE A "SCOPING MEETING". AT THAT TIME WE (THE PUBLIC) CAN SUBMIT COMMENTS, CONCERNS, + SUGGESTIONS. IT WAS ASSUMED THAT WE WOULD TO ABLE TO SIT DOWN IN A GROUP AND DISCUSS THE PROJECT WITH THE LEADERS. ALL THE INFORMATION AT THE SCOPING MEETING WE ALL RECEIVED IN THE MAIL. WE WERE TOLD THERE WILL BE ANOTHER MEETING SOON OR IN THE FALL.

OF COURSE WE ALL ALL CONCERNED ABOUT PROPERTY VALUE. WILL THIS DRIVE PRICE OF OUR HOMES LOWER OR HIGHER? THE PARK AND PLAYGROUND IDEA IS GOOD BUT DOESNT COUNTY PLANNING ALREADY HAVE A PLAN IN PROCESS BEHIND CHARLES BROWN. WE HAVE PAPERWORK THAT GOES BACK TO NOV. 2007 - ON SO MANY PROJECTS: PARKWAY ALIGNMENT, STONEHENGE LLC, TRAIL CROSS OVER, Hwy 49 to Hwy 50, PATERSON RANCH FIRE SAFETY, ELDO TRAIL BRIDGE, SHERIFF DEPT DEVELOPMENT, REPLACE 9 LIGHT POOLS ON PATTERSON DR, CREEKSIDE PLAZA PROJECT etc etc etc. It's JUST OVERWELMING HOW MANY PLANS

AND PROJECTS THIS AREA HAS GONE THROUGH. PEOPLE SAY "YOU CANT STOP PROGRESS" WHAT A SHAME! WE ALL MOVED HERE TO KEEP IT COUNTRY. WE LIKE IT THAT WAY. I'm JUST A HOMEOWNER, ARRIVED IN 1976. WE WERE CONSIDERED FLATLANDER. THE PEOPLE THAT LIVED HERE THEN DIDNT WANT US TO MOVE HERE EITHER. SO I GUESS YOU CANT STOP PROGRESS. WHAT A SHAME!

Dorado Oaks NOP Scoping Meeting Comment Card
Date: August 20, 2019

Name: Nancy Franzi **Address:** 2001 Great View Lane Diamond Springs

Email: fancynanc58@sbcglobal.net

I am "not" in favor of the new subdivision planned in Diamond Springs. Pleasant Valley Rd is a traffic jam at all times of the day. If you patron the businesses on the South side you will never be able to make a left hand turn to exit. Therefore these businesses are suffering already. Many times I will not stop at any of them unless I can exit to the Right.

We do not need anymore TRAFFIC! We moved here from Sacramento to get away from the city traffic & crime.

Leave Diamond Springs ALONE!

If we need to evacuate for any reason, hundreds of extra cars are going to possible injure or kill homeowners.

Do you want that on your con conscious!!!

For questions, please contact: michelle@mmsstrategies.com

Subject: Fwd: [dorado_oaks] Old Stonehenge New Dorado Oaks feedback
Date: Friday, August 16, 2019 at 12:22:11 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Brad Gardner** <brad7145@gmail.com>
Date: Tue, Jul 30, 2019 at 11:44 AM
Subject: [dorado_oaks] Old Stonehenge New Dorado Oaks feedback
To: <dorado_oaks@edcgov.us>

Tom, as
you no doubt are aware, there is major concern about emergency exit options all along those depending on exit options out of Patterson Dr from the south going north. One aspect of this subject I'd like to put on the table here is an emergency exit option that
should be addressed at the Aug 20 meeting which i will not be able to attend. Off of Griffith, there is an existing in-use easement (Rodriquez parcel) that could connect to the old Tullis Mine Rd. and allow emergency access past Lot 156 through 148. These
lots are also stranded (single threaded) in the event of a fire to their north, and could use an emergency gate to exit south onto Griffith via this existing easement. Justification for these types of circulation discussions can site Cal Fire Title 14 which
now prohibits lot splits without a "non-parallel" alternative when there is a dead end road of more than 500 ft. I am a former commissioner for the City of Folsom, and may be able to assist in some aspects of project feedback to the County.

(FYI only, this project
wraps around my property via Lot 382 that at one time was to be donated to the Conservancy. CTA engineering did Stonehenge and my Res building project on Antares Dr)

Brad Gardner
533 Antares Dr
Diamond Spgs
530-409-6380

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

Sunday, August 18, 2019 at 7:58:46 AM Pacific Daylight Time

Subject: Fwd: [dorado_oaks] Objection to zone change
Date: Friday, August 16, 2019 at 12:22:36 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **'Deborah Carter' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Fri, Aug 2, 2019 at 12:59 PM
Subject: [dorado_oaks] Objection to zone change
To: <dorado_oaks@edcgov.us>

My name is Dr Deborah Carter and I own the land directly to the north of the high density apartments proposed on the Dorado project. Two main objections it is a wetland and second it may contain a protected species of animal. When I bought the land it was zoned for small houses. It is in appropriate to build on wetlands and this project has 143 acres to chose from that would better serve that part of the project. Specially by Fowler Lane. I plan to launch an investigation as to whether it is legal to build on that land and gain community support to have that planning change back to its old design. Thank you. Deborah Carter. 2220 Sunrise Drive Diamond Springs Ca. Can you give me the number of who inspects that area for designated as a wetland. Thank you. 916 296 3068. Thank you
Sent from my iPhone

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] Dorado Oaks: Where is the "Initial Study" used to determine the need for an EIR?
Date: Friday, August 16, 2019 at 12:23:15 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Fri, Aug 2, 2019 at 2:40 PM
Subject: [dorado_oaks] Dorado Oaks: Where is the "Initial Study" used to determine the need for an EIR?
To: <dorado_oaks@edcgov.us>
Cc: <Rommel.Pabalinas@edcgov.us>

Dear Mr. Purciel (and Pabalinas),

I am in receipt of the Notice of Preparation for the Dorado Oaks Subdivision via e-mail notice of July 29, 2019.

After review of the Document and attachments, I am wondering where the "Initial Study" (IS) for the Project is? CEQA Process suggests this IS be attached to the NOP so that the public, Responsible and Effected Agencies would have documentation of the potentially significant Environmental Impacts of the Project identified by the Lead Agency triggering the need for the EIR. There is a Scoping Meeting on August 20 that will be facilitated greatly by the provision of this IS to me and the Public in general.

Please recirculate your notice and include the IS so the Public and Agencies may be better informed and involved in the Planning Process as described in CEQA and the CA Government Code.

Thank you for your immediate response to this request.

Sincerely,

Ken R. Greenwood
Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

Subject: Fwd: [dorado_oaks] Re: Dorado Oaks NOP has no Initial Study Attached or Population/Dwelling Unit estimates included
Date: Friday, August 16, 2019 at 12:23:33 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Rommel Pabalinas** <rommel.pabalinas@edcgov.us>
Date: Tue, Aug 6, 2019 at 9:28 AM
Subject: [dorado_oaks] Re: Dorado Oaks NOP has no Initial Study Attached or Population/Dwelling Unit estimates included
To: Ken Greenwood <krg@d-web.com>
Cc: Dave Purciel <dorado_oaks@edcgov.us>, BOS Clerk Jim Mitrisin <edc.cob@edcgov.us>

I am responding to your inquiry below which was also sent via a separate email.

Regarding the absence of the Initial Study, per CEQA Guidelines 15063(a): Following preliminary review, the Lead Agency shall conduct an Initial Study to determine if the project may have a significant effect on the environment. If the Lead Agency can determine that an EIR will clearly be required for the project, an Initial Study is not required.

The Planning Department has determined that the project would require an Environmental Impact Report (EIR). Similarly, the previous version of the project (Stonehenge Springs Tentative Subdivision Map), which was withdrawn and replaced with this project, was also determined to have an EIR.

Your comments on the project regarding the units, staff will accept these comments and will be analyzed as part of the EIR. Should you have any additional comments, please send to the designated email for the project.

Lastly, a minor correction, the assigned planner is Tom Purciel not Dave Purciel.

On Mon, Aug 5, 2019 at 4:32 PM Ken Greenwood <krg@d-web.com> wrote:

> Dear Planning,
>
> I am in receipt of the Notice of Preparation for the Dorado Oaks Subdivision via e-mail notice of July 29, 2019.
>
> After review of the Document and attachments, I notice the following:
>
> > The Project Description has no hard information on the potential number of "Dwelling Units" the Project may encompass.
>
> - Yes, there are 156 Single Family and 225 Multi-Family Lots proposed. However, it is unclear how many "Dwelling Units" (and therefore population/trips per day generation, etc.) there will be in the Project.
>
> - You have not done any math on the # of units possible on the 225 "Multi-Family" lots. Therefore the Public cannot possibly understand, analyze nor quantify the Impacts of

the Project. **What are these numbers?**

ADDITIONALLY (and subject of my August 2, 2019 E-mail request):

> I am wondering where the "Initial Study" (IS) for the Project is located? CEQA Process suggests the IS be attached to the NOP so that the public, Responsible and Effected Agencies would have documentation of the potentially significant Environmental Impacts of the Project identified by the Lead Agency triggering the need for the EIR. There is a Scoping Meeting on August 20 that will be facilitated greatly by the provision of this IS to me and the Public in general.

Without this document being available, the Public is effectively left out of the Planing Process as the rational for the EIR is triggered by the Initial Study that was prepared some time ago for the "Early Consultation" by Agencies.

> Where is the Initial Study for this Project?

Therefore: **Please recirculate your notice** and include the Initial Study and Dwelling Unit/Population estimations so the Public and Agencies may be better informed and involved in the Planning Process as described in CEQA and the CA Government Code.

> An extension of the Comment Period is appropriate given this SEVEN DAY delay in providing this vital information to the Public.

Thank you for your immediate response to this request.

Sincerely,

Ken R. Greenwood

Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

CC: Clerk of the Board of Supervisors

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==========
Rommel (Mel) Pabalinas, Principal Planner
El Dorado County Community Development Services
Planning and Building Department
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Sunday, August 18, 2019 at 8:00:32 AM Pacific Daylight Time

Subject: Fwd: [dorado_oaks] dorado oaks proposal
Date: Friday, August 16, 2019 at 12:23:47 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **'michelle hansen' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Tue, Aug 6, 2019 at 1:28 PM
Subject: [dorado_oaks] dorado oaks proposal
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>

This is a sample of what i have sent out to my fellow neighbors in Diamond Springs. I have so many concerns about this proposal. I live on a quiet little dead end road. This massive subdivision will completely encroach on my property and completely change my quality of life as well as my direct neighbors...It will also completely change the whole feel of our little , historical town. I am so opposed to this. And i will fight this till the end.

For those of you that live in Pleasant Valley, Somerset, Fairplay and Grizzly Flat, I wanted to be sure you were aware of what they are trying to do in Diamond Springs,,,Even if you don't live in DS this will affect you,, There is a proposal for about 600 apt units and multi family homes to be built behind Deb's Frosty on Pleasant Valley Rd, This will create even more of a traffic and safety NIGHTMARE for those of you that use PV to commute back and forth to work,,,I'm upset about it because i live in DS on a nice quiet little street and where they want to build will be 800 ft from my house,,This project was stooped years ago and it's time to stop it again, there is a meeting August 20, at the Firemans hall here in DS at 6pm, then you can and need to write letters to the county supervisors and everyone on the committee by August 28,,,Please help to keep Diamond Springs the small, quiet historical town that it is, I have to tell you also that part of the are they want to build on is a Miwok burial site with historical grinding rocks, it also will back up to a wetland /wildlife are, please let your voice be heard and let's try to STOP the ENCROACHMENT / INVASION in Diamond Springs

Sincerely, Michelle Hansen

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

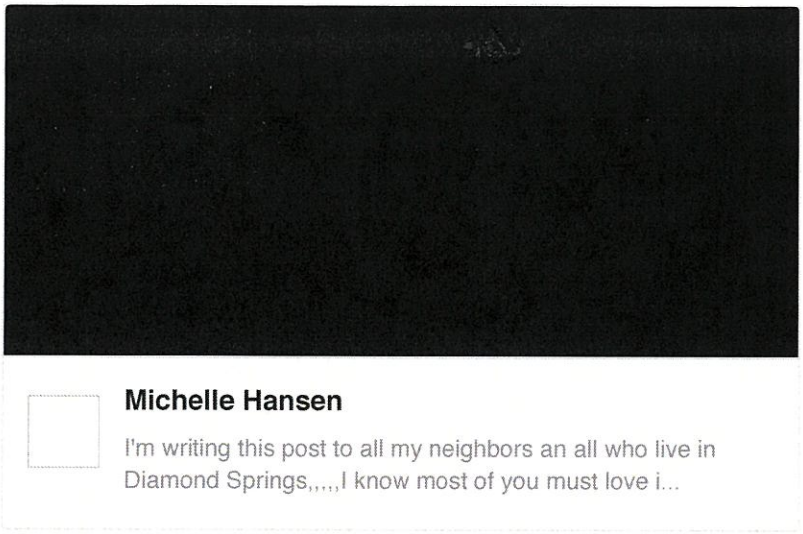
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Subject: Fwd: [dorado_oaks] Fw: dorado oaks proposal
Date: Friday, August 16, 2019 at 12:24:07 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **'michelle hansen' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Tue, Aug 6, 2019 at 1:30 PM
Subject: [dorado_oaks] Fw: dorado oaks proposal
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>
Sent: Tuesday, August 6, 2019, 1:09:41 PM PDT
Subject: dorado oaks proposal

31 at 11:32 PM



I'm writing this post to all my neighbors an all who live in Diamond Springs,,,,,I know most of you must love it here as much as i do,,,so i want to be sure all of you are aware of what could possibly happen to our cute, little quiet town,,,,There is a proposal for a subdivision of new homes and up to 600 new apartment units to be built right behind Deb's Frosty.....it is to be called Dorado Oaks,,,,I feel very emotional and upset about all of this,,,,,,,,If we let this happen it will change the quality of our lives here,,,,,It will have a huge impact on our environment, on us, on all our nature an wildlife in the are,,,,,There will be more people, more cars and alot more noise.....It will completely destroy our small town feel.....Can you even wrap your heads around 600 new apartment units,,,,that means average of 1200 more people and at least 600 more cars around and about Pleasant Valley Rd, and Missouri Flat ....They are allowing this to happen in Folsom....where the population and the traffic will be a total nightmare.....They tried to put this proposal through here about 10 years ago,,,and people were very upset and totally against it.....Let's all stand together on this and not let them ruin our little , sleepy town of Diamond

Springs.....I own my home here and fear greatly that with high density apartments and houses going in it will take it's toll on my home and property value,,,,Why? Because no one will want to live here anymore , it will become just like all he other overcrowded cities,,,,,,,,,,,,,,,,and our Quality of Life here that we all treasure will be destroyed and ruined forever,,,,,,So I ask you please do what you can to voice your concerns and opposition to this proposal,,,,,,you can write letters , make phone calls and their is a meeting on Tuesday , August 20, at 6pm in the Fireman's Hall here in town,,,,Please let's don't let them take so much away from all of us who enjoy our lives here



Sincerely, Michelle Hansen

--

Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
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Sunday, August 18, 2019 at 8:02:13 AM Pacific Daylight Time

Subject: Fwd: Dorado Oaks Tentative Subdivision
Date: Friday, August 16, 2019 at 12:25:11 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks
Attachments: top-shadow_0b897832-fd88-4832-a843-c9d22532cc56.gif, ssbmi-logo-signature-sm_b52da26e-65c9-4e13-aec9-43d90d7e6300.jpg, bottom-shadow_9be901c6-21ec-48cc-acc3-ac5d15072117.gif

---------- Forwarded message ---------
From: **Kara Perry** <KPerry@ssband.org>
Date: Tue, Aug 13, 2019 at 2:15 PM
Subject: Dorado Oaks Tentative Subdivision
To: tom.purciel@edcgov.us <tom.purciel@edcgov.us>
Cc: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Good Afternoon Mr. Purciel,

My name is Kara Perry and I work in the Cultural Resources Department for the Shingle Springs Band Of Miwok Indians. I have received a few call regarding this project and would like to have a chance to meet with you and discuss. I am aware that you are out of the office until the 14th, so when you have a chance please let me know your availability.

Thank you

Kara

Kara Perry
Cultural Outreach Coordinator
Cultural Resources Department

Phone: (530) 488-4049
Mobile: (530) 363-5123
Fax: (530) 558-2034
Email: KPerry@ssband.org

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Sunday, August 18, 2019 at 8:02:45 AM Pacific Daylight Time

Subject: Fwd:
Date: Friday, August 16, 2019 at 12:25:42 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Wed, Aug 14, 2019 at 8:50 AM
Subject: Fwd:
To: PL-dorado_oaks-m <dorado_oaks@edcgov.us>

---------- Forwarded message ---------
From: **Planning Department** <planning@edcgov.us>
Date: Mon, Aug 12, 2019 at 8:25 AM
Subject: Fwd:
To: Tom Purciel <tom.purciel@edcgov.us>

---------- Forwarded message ---------
From: **michelle hansen** <michelleh2294@yahoo.com>
Date: Sat, Aug 10, 2019 at 12:34 PM
Subject:
To: planning@edcgov.us <planning@edcgov.us>

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: bldgdept@edcgov.us <bldgdept@edcgov.us>
Sent: Saturday, August 10, 2019, 12:32:20 PM PDT
Subject:

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>
Sent: Saturday, August 10, 2019, 12:26:43 PM PDT
Subject:

Dear Sirs:

I'm writing this letter to you because I'm very concerned about the encroachment and invasion into Diamond Springs. This massive development of Dorado Oaks will infringe and have a huge negative impact on the already existing neighborhoods around Fowler Rd, and all the small roads in between.

This high density development needs to be somewhere else where there is open land and no residents that live there and would have to suffer the impact.

This plan violates many ordinances and policies (LAWS) that have been implemented over the last 30 years meant to protect our rural community.

We should have and did not receive an EIR report along with the the project proposal. This land has many things on it that should be protected for the well being o the environment. Wetlands, a creek, an Indian burial site and grinding rocks,,,along with all the wildlife that call it home.

The already existing neighborhoods will be forced to endure extreme levels of noise and light pollution, along with traffic and dirt for years.

This project will also affect all of our property values that live in these neighborhoods, it will make our homes worth less because of the high density building.

The statement in a general plan is Protection of living conditions in adjacent neighborhoods, preserving privacy and character of adjacent residents, so that they are not significantly impacted.

I ask you to please consider an alternative place for these apartments and houses to be built.

Sincerely, Michelle Hansen

--
Tom Purciel
Associate Planner

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--
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Subject: Fwd: [dorado_oaks] Fwd:
Date: Friday, August 16, 2019 at 12:26:13 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Wed, Aug 14, 2019 at 8:51 AM
Subject: [dorado_oaks] Fwd:
To: PL-dorado_oaks-m <dorado_oaks@edcgov.us>

---------- Forwarded message ---------
From: **Planning Department** <planning@edcgov.us>
Date: Mon, Aug 12, 2019 at 8:25 AM
Subject: Fwd:
To: Tom Purciel <tom.purciel@edcgov.us>

---------- Forwarded message ---------
From: **michelle hansen** <michelleh2294@yahoo.com>
Date: Sat, Aug 10, 2019 at 12:34 PM
Subject:
To: planning@edcgov.us <planning@edcgov.us>

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: bldgdept@edcgov.us <bldgdept@edcgov.us>
Sent: Saturday, August 10, 2019, 12:32:20 PM PDT
Subject:

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>
Sent: Saturday, August 10, 2019, 12:26:43 PM PDT
Subject:

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This high density development needs to be somewhere else where there is open land and no residents that live there and would have to suffer the impact.

This plan violates many ordinances and policies (LAWS) that have been implemented over the last 30 years meant to protect our rural community.

We should have and did not receive an EIR report along with the the project proposal. This land has many things on it that should be protected for the well being o the environment. Wetlands, a creek, an Indian burial site and grinding rocks,,,along with all the wildlife that call it home.

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This project will also affect all of our property values that live in these neighborhoods, it will make our homes worth less because of the high density building.

The statement in a general plan is Protection of living conditions in adjacent neighborhoods, preserving privacy and character of adjacent residents, so that they are not significantly impacted.

I ask you to please consider an alternative place for these apartments and houses to be built.

Sincerely, Michelle Hansen

--
Tom Purciel
Associate Planner

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Subject: Fwd: Tom Purciel is out of the office. Re: Dr. Carter @ 2220 Sunrise Road (Resident adjacent to Dorado Oaks)
Date: Friday, August 16, 2019 at 12:24:53 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Tue, Aug 13, 2019 at 9:49 AM
Subject: Tom Purciel is out of the office. Re: Dr. Carter @ 2220 Sunrise Road (Resident adjacent to Dorado Oaks)
To: <rommel.pabalinas@edcgov.us>

I will be out of the office From Monday July 22, 2019 until Wednesday August 14, 2019. I will respond to your message when I return. If you need immediate assistance, you may contact my supervisor, Mel Pabalinas at: (530) 621-5363. Thank you!

--
Tom Purciel
Associate Planner

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Sunday, August 18, 2019 at 8:04:46 AM Pacific Daylight Time

Subject: Fwd: [dorado_oaks] Dorado Oaks Tentative Subdivision
Date: Friday, August 16, 2019 at 12:27:17 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **'Jane Oates' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Wed, Aug 14, 2019 at 12:04 PM
Subject: [dorado_oaks] Dorado Oaks Tentative Subdivision
To: <dorado_oaks@edcgov.us>

Hello Mr. Purciel
After reviewing the proposal I have a question or suggestion. If Argonaut Drive is to be an access point (thru traffic from Dorado Oaks) to Patterson Drive then a study should be done for traffic impacts for Patterson Drive and the intersection of Patterson Drive and Hwy 49 (Pleasant Valley Road). It appears as if the southern section of Dorado Oaks would find easier access to Hwy 49, El Dorado, and even Missouri Flat Road if access was via Patterson Drive rather than Faith Lane.
Thank you for your consideration
Jane Oates.

--
Tom Purciel
Associate Planner

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(530) 621-5903
tom.purciel@edcgov.us
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Subject: Fwd: Stop a large (143 acres) high-density subdivision proposed for quiet rural Diamond Springs village!
Date: Friday, August 16, 2019 at 12:27:53 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks
Attachments: Dorado Oaks proposed subdivision at Diamond Springs.pdf

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Wed, Aug 14, 2019 at 1:56 PM
Subject: Fwd: Stop a large (143 acres) high-density subdivision proposed for quiet rural Diamond Springs village!
To: PL-dorado_oaks-m <dorado_oaks@edcgov.us>

---------- Forwarded message ---------
From: **Richard Boylan PhD** <drboylan@outlook.com>
Date: Sun, Aug 4, 2019 at 5:39 PM
Subject: Stop a large (143 acres) high-density subdivision proposed for quiet rural Diamond Springs village!
To:

Friends,

The County Planning Commission is providing news of a new project that would jam 126 High-Density Residential and 225 Multi-Family Housing units (total: 351 units!) into 143 acres of oak woodlands, creeks, trails and ponds, currently open space, right south of **Diamond Springs'** main street (Pleasant Valley Road).

The project would turn Diamond Springs from a quiet rural township into a quasi-urban center, and would *render meaningless* the Diamond Springs Historic District designation which includes portions of this proposed project.

(Details are in the attachment. Scroll down to the maps, especially Figure 2, 'Project Overview'.)

This urban sprawl must not happen. It would spell the end of the rural village character of our town.

But the 143 acres would and *should* make an excellent Regional Park, which this central-south part of the county sorely lacks. The County should reject the subdivision, and instead listen to the people and designate these 143 acres as a wonderful park for all El Doradans to enjoy.

We can make this happen if we demand that the County create a *long-overdue* Regional Park in the heart of the long-neglected central-south part of our county. The heart of that area is Diamond Springs.

You can help. Attend the county Presentation and Comments Session on **Tues., August 20, 6:00 PM**, at Firefighter's Memorial Hall, 3734 China Garden Rd. at Pleasant Valley Rd., (behind the Diamond Springs Firehouse). Submit your comments. Save our village.

Thank you.

Richard Boylan



Virus-free. www.avg.com

--
Tom Purciel
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Subject: Fwd: [dorado_oaks] Fw: Dorado Oaks Project
Date: Friday, August 16, 2019 at 12:28:12 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Bette Lasher** <blasher1@sbcglobal.net>
Date: Thu, Aug 15, 2019 at 12:11 PM
Subject: [dorado_oaks] Fw: Dorado Oaks Project
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>
Cc: bosthree@edcgov.us <bosthree@edcgov.us>

Subject: Dorado Oaks Project

I have lived on the corner of Georges Alley and SR49 since 1977 and have seen the increase in traffic over the years so was delighted to see the much touted Parkway start as it has been talked about for decades.

However, was appalled at the enormity of the Dorado Oaks project unit wise. There is kill and over kill and this is over kill by a huge amount.

The speed in Diamond Springs on SR49 is posted at 25, for all the good that does as the average speed is 45 and from around 10 pm to 2 am at night it is a speedway from Missouri Flat to Fowler lane, now you propose more traffic. As to your proposed ingress/egress route on Faith Lane, a round about would be a disaster. A four way traffic signal with China Garden Road would be the best for traffic flow.

We already have several low income housing units in our little area, plus four mobile home parks, all but one is a senor park. Along with a quiet senior development on Panther Lane. Isn't this enough? 381 low income units is about 300 to many. The impact on the Union Mine High School area will be dramatic as traffic on Koki Lane is already horrid, plus there is project planned for there also. The roads in these areas are not designed to accommodate heavy traffic. The commute times in Diamond Springs/El Dorado are already congested.

I am not sure if Diamond Spring/El Dorado has been designated as the area to dump all the low income housing mandated by Sacramento or not but his is totally unfair to the citizens of both areas. You are already proposing to re-zone 8 plus acres for this project, why not re-zone other lands around the county?

Where is the water coming from? We have been told to cut back to a bare minimum and now this. Who is paying for the highway part of the project? It seems like there is a movement to totally destroy the rural structure of Diamond Springs.

Yes, I will be at the meeting on the 20th.

Bette Lasher (Elizabeth)

3760 Georges Alley
Diamond Srings, CA 95619
530-622-9192
blasher1@sbcglobal.net

cc: District Three Supervisor

--
Tom Purciel
Associate Planner

County of El Dorado
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Subject: Fwd: [dorado_oaks] Scoping Meeting Report Diamond Springs. Dated July 29, 2019
Date: Friday, August 16, 2019 at 12:28:38 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Fri, Aug 16, 2019 at 11:36 AM
Subject: Re: [dorado_oaks] Scoping Meeting Report Diamond Springs. Dated July 29, 2019
To: Bruce Turner <turner2000@yahoo.com>

Hi Bruce,

Below is the entire paragraph from the document containing the text you were unable to view. Note: If you would like to submit comments regarding this project or item(s) that you feel should be addressed in the project's Environmental Impact Report (EIR), please submit written comments on or before the due date shown on the Scoping Meeting notice. Comments should be sent to the project email address: dorado_oaks@edcgov.us.

Regards,

Tom Purciel - Project Planner

Project Overview - Dorado Oaks Tentative Subdivision Map Site

The Dorado Oaks Subdivision consists of the following entitlement requests:

1. A Rezone of an 8.94-acre portion of the 142.3-acre project site from Residential, Multi-Unit (RM) to Residential, Multi-Unit - Planned Development (RM-PD);

2. A Phased Tentative Subdivision Map, consisting of 14 Large Lots, to subdivide the 142-acre property into 156 single-family lots ranging in size from 6,000 square feet to approximately 24,000 square feet, 225 multi-family lots ranging in size from approximately 2,800 square feet to 8,800 square feet and 20 open space/landscape lots; and

3. A Planned Development Permit to establish an official Development Plan for Dorado Oaks Subdivision that includes modification to specific development standards in the RM zone district for 91 of the proposed multi-family lots on an 8.94-acre portion of the project site.

On Thu, Aug 15, 2019 at 11:29 AM 'Bruce Turner' via PL-dorado_oaks-m <dorado_oaks@edcgov.us> wrote:

> I have been reading the the information sent to me by your office and I see on page 5 under Project Overview item 2 end of paragraph a missing sentence after the word "and" would you please email me the competed sentence . Thank you Bruce Turner 530 626 0940

--
Tom Purciel
Associate Planner

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Subject: Fwd: ATT: TOM PURCIEL, BRIAN VEERKAMP
Date: Monday, August 19, 2019 at 8:35:57 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Tom Purciel** <tom.purciel@edcgov.us>
Date: Mon, Aug 19, 2019 at 8:30 AM
Subject: Fwd: ATT: TOM PURCIEL, BRIAN VEERKAMP
To: PL-dorado_oaks-m <dorado_oaks@edcgov.us>

---------- Forwarded message ---------
From: **Planning Department** <planning@edcgov.us>
Date: Mon, Aug 19, 2019 at 8:20 AM
Subject: Fwd: ATT: TOM PURCIEL, BRIAN VEERKAMP
To: Tom Purciel <tom.purciel@edcgov.us>

---------- Forwarded message ---------
From: **Cindy Long** <chstaffs@gmail.com>
Date: Sun, Aug 18, 2019 at 12:10 AM
Subject: ATT: TOM PURCIEL, BRIAN VEERKAMP
To: <planning@edcgov.us>
Cc: <bosthree@edcgov.us>

RE: NOP of a Draft Environmental Impact Report for the Dorado Oaks Subdivision.

I am in receipt of said notice and have multiple concerns regarding the project.

My concerns are about the scope of this project; how many dwellings exactly. Single family dwellings, multi family dwellings- Condominiums, Duplexes, Apartments?
Square footage of the dwellings? Size of the residential lots?
Where is the complete Public Disclosure regarding this information?
How will this impact traffic? To be able to understand the need for upgraded roads, traffic circles (taking out existing businesses is not always the better solution.) vs stoplights; to make an informed devision the pertinent information needed to be provided up front.
What about Storm/water drainage? The area along Pleasant Valley Road has already had flooding problems.
Fire protection?
Based on the information / lack of information provided, I am in opposition to the Dorado Oaks Project at this time.

I respectfully request to be put on a mailing list to be notified of any additional reports filed, a copy of the DEIR when completed and any additional notices and meeting dates.
I am sincerely hoping to gain additional insite regarding Dorado Oaks Project at the August 20 th meeting.

C. Long

350 Pleasant Valley Rd #71
Diamond Springs, CA
95619

--
Tom Purciel
Associate Planner

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Subject: Fwd: [dorado_oaks] Dorado Oaks thoughts and such
Date: Monday, August 19, 2019 at 3:30:07 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Mon, Aug 19, 2019 at 2:01 PM
Subject: [dorado_oaks] Dorado Oaks thoughts and such
To: Tom Purciel <dorado_oaks@edcgov.us>
Cc: edc cob <edc.cob@edcgov.us>

Tom,

Just left you a message regarding the Dorado Oaks project and the meeting tomorrow night.

I received a response to my inquiry about the need (or not) for an "Initial Study" for this project at this time. OK, the Guidelines say you don't have to, but perhaps it would have helped identify the Potentially Significant (or not) Impacts of the Project, both to Responsible Agencies and particularly to the Public who at this time are suffering from a lack of objective and accurate information regarding this Project. Gauging from a THOUSAND comments on 4 or 5 Social Media Posts, there is no shortage of interest in this Project, and no shortage of a lack of answers to questions regarding the potential impacts (Sounds like the definition of the "Purpose" of CEQA? Yes!).

Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
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(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] Dorado Oaks thoughts and such (resend!) IMPORTANT considerations for tomorrow's meeting.

Date: Tuesday, August 20, 2019 at 8:13:22 AM Pacific Daylight Time

From: Tom Purciel

To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Mon, Aug 19, 2019 at 4:47 PM
Subject: [dorado_oaks] Dorado Oaks thoughts and such (resend!) IMPORTANT considerations for tomorrow's meeting.
To: Tom Purciel <dorado_oaks@edcgov.us>
Cc: edc cob <edc.cob@edcgov.us>, Rommel Pabalinas <Rommel.Pabalinas@edcgov.us>

Tom,

Just left you a message regarding the Dorado Oaks project and the meeting tomorrow night.

I received a response to my inquiry about the need (or not) for an "Initial Study" for this project at this time. OK, the Guidelines say you don't have to, but perhaps it would have helped identify the Potentially Significant (or not) Impacts of the Project, both to Responsible Agencies and particularly to the Public who at this time are suffering from a lack of objective and accurate information regarding this Project. Gauging from a THOUSAND comments on 4 or 5 Social Media Posts, there is no shortage of interest in this Project, and no shortage of a lack of answers to questions regarding the potential impacts (Sounds like the definition of the "Purpose" of CEQA? Yes!).

>> No intention to "send" the info above at this point! Sorry. There's more!

Had this "Baseline" information (usually generated by the Initial Study process) been sent out with the NOP, people would have more information and therefore a higher percentage of substantive comments tomorrow night (and beyond). (You ARE going to be dealing a potentially and justifiably ANGRY crowd!) This would lead to a savings of everybody's time and effort, and especially their emotions which are running very high at this point. Yes, these projects always generate lots of emotions and that is to be expected AND managed along with the Project. How? By providing MORE information up front you can reduce the emotional responses and just plain ignorance to the project and the "Impacts" associated with it and have a better informed "Public Participation" component. As of now, that's going to be difficult as the Genie is out of the bottle and it is MAD and less informed.

Additionally, there is an opportunity to save some of this ignorance by having your bags fully packed tomorrow night with an updated handout describing the Project. I might suggest info and exhibits as follows:

- A CLEAR explanation of how many "Dwelling Units" and # of people might be expected at full build-out.
    - This information is missing, if not difficult to find in the NOP document.

        - WHY should I or anyone else have to search this out?
    - We see there are 156 Single Family Lots and 225 Multifamily lots. But only with a "Density Calculator App" (that doesn't exist) could we possibly know these numbers.
        - WHY should I or anyone else have to search this out in the Traffic Study (or anywhere else!)?

- Put the "Project Overview" (currently on PAGE 5 of the NOP) right up front and on a Power Point Slide and a 1 page handout.
    - Why should anyone have to dig so deeply to discover this information?
    - (And as above, why doesn't it include a CLEAR number (or range) of DU's and potential population?)
        - People can better understand this if presented clearly and early.

- A large overview map that combines the EXISTING and PROPOSED 'Parcelization' as shown on Figures 5 & 6 so people can clearly identify:
    - Where do I live in relation to the project?
        - (OR, "show me where the Developer touched you?")
        - This allows people to clearly see all kinds of BASELINE information you won't have to explain to them (because you already did)!
    - How far is the Project (and at what potential density) **from me** (or anyone else).
        - **People are usually ONLY interested in themselves, SO MAKE IT EASIER for them to see, touch and understand this relationship.**
- What are the immediate and long term nature of the "Alternative Access Points" shown connecting to Argonaut (west side) and two connections to Fowler Road to the northeast and southeast and "Tullis Mine Road" shown on Figure 6 and (and not clearly) described on Page 6 of the NOP?
    - Perhaps a RED ARROW showing the 4 proposed "General Circulation" access points and a small RED ARROW for SE Fowler "Emergency" access on Figure 6.
    - Also a long red arrow on South Fowler to show where the "Minor widening" would take place (IE: Anywhere <18' wide per Fire Regs).
        - These people should know this information and some may welcome better access to their property, and/or realize there are a few places where this will require some major construction at stream crossings.

- Maybe just maybe a completed **"Initial Study"** for all the reasons stated above and to validate the decision to do an EIR and supplement the information. This is NOT a new request as I suggested it last week in my e-mail to the above addressees. Sadly, your Supervisor used and the Board of Supervisors appears to support the "Guidelines don't require it" excuse to make your job harder and the Public a little less informed, therefore ignorant and angrier due to a lack of information.
    - Not what the process should generate!

- Do an audio if not a video recording of this meeting as it will give you an accurate record of the proceedings and an opportunity to correctly document concerns if notes miss them.
    - Don't trust electronics and take notes also!
        - All about CYA. (Can You Articulate!)

CEQA is pretty clear in the intent to provide a full public disclosure of "Potentially Significant Environmental Impacts" through the review process. Yes, the EIR process ***should*** do that,

but by providing MORE information up front, I guarantee the "Process" will go much better with fewer surprises by sticking to the ***intent*** and rising above the ***minimum*** requirements of the Law and Guidelines. So far, this process has been "informationally deficient" and is off to a shaky start.

Good luck and see you tomorrow.

Sincerely,

Ken Greenwood
Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

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Tom Purciel
Associate Planner

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RECEIVED
AUG 19 2019
EL DORADO COUNTY
PLANNING AND BUILDING DEPARTMENT

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

August 13, 2019

Tom Purciel
El Dorado County
2850 Fairlane Court
Placerville, CA 95667

RE: SCH# 2019071041 Dorado Oaks Tentative Subdivision Map (County File No. Z19-0005/TM18-1538/PD19-0005), El Dorado County

Dear Mr. Purciel:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Nancy Gonzalez-Lopez
Staff Services Analyst

cc: State Clearinghouse

CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

2019 AUG 16 PM 3:41

Central Valley Regional Water Quality Control Board

RECEIVED
PLANNING DEPARTMENT

14 August 2019

Tom Purciel
El Dorado County
2850 Fairlane Court
Placerville, CA 95667

CERTIFIED MAIL
7014 2120 0001 4292 4379

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, DORADO OAKS TENTATIVE SUBDIVISION MAP (COUNTY FILE NO. Z19-0005/TM18-1538/PD19-0005) PROJECT, SCH#2019071041, EL DORADO COUNTY

Pursuant to the State Clearinghouse's 29 July 2019 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Dorado Oaks Tentative Subdivision Map (County File No. Z19-0005/TM18-1538/PD19-0005) Project, located in El Dorado County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be

approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State

Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from

excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program.

There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/ or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 11-100 acres are currently $1,277 + $8.53/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4812 or Jordan.Hensley@waterboards.ca.gov.

Jordan Hensley
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

CERTIFIED MAIL

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Rancho Cordova, CA 95670

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Tom Purciel
El Dorado County
2850 Fairlane Court
Placerville, CA 95667

RECEIVED
AUG 16 2019
EL DORADO COUNTY
PLANNING AND BUILDING DEPARTMENT

9505 7841 0005

Tom Purciel

Aug. 10, 2019

Planning Services Division
2850 Fairlane Ct.
Placerville, CA 95667

Dorado Oaks Fire Evacuation Routes Comment

A large part of the county can be expected to use westbound Pleasant Valley Rd. in the case of a wildfire. Dorado Oaks will compound the congestion. Further, evacuees from Dorado Oaks would have to turn left, west, into a panicked stream of traffic. Under the best of circumstances it is difficult to turn left onto that road from the south side of Diamond Springs. Just try it. In an emergency it will cause a potentially fatal traffic jam. Traffic circles or traffic lights will not mitigate this obvious hazard. Nor will the proposed cut-off between Missouri Flat and Highway 49. The EIR should incorporate solutions for lessons learned from the deadly Camp Fire evacuation.

Dorado Oaks must create a secondary evacuation route from its southern end to connect to Highway 49, perhaps via Union Mine Rd., to avoid Diamond Springs altogether.

Thank you,

Harry Mercado

Harry Mercado
4280 Patterson Dr., #54
Diamond Springs, CA 95619

RECEIVED
AUG 12 2019
EL DORADO COUNTY
PLANNING AND BUILDING DEPARTMENT

Craig Silva

Diamond Springs, CA

8-1-19

El Dorado County Planning Department

El Dorado County Board of Supervisors

Stonehenge Springs LLC

Dorado Oaks: As planned, is not what the area needs for new housing at all. The proposed high-density development will cause major significant problems. Most notably the following items:

- **Fire Danger:** Recent California wildfires have demonstrated that dense housing clusters in this type of area are very susceptible to mass damage as there is not enough separation between buildings to create defensible spaces.
- **Urban Sprawl:** This type of high-density development is exactly what people in the area have come here to escape from.
- **Traffic Congestion:** There would be way too much traffic from this many residences entering onto an already over-crowded two lane road.

However, if this housing development proposal were to be modified to a minimum residential lot size of 1 acre, it should be welcomed with red-carpet treatment.

Sincerely,

Craig Silva

RECEIVED

AUG 02 2019

EL DORADO COUNTY
PLANNING AND BUILDING DEPARTMENT

JOHN D'AGOSTINI
SHERIFF - CORONER - PUBLIC ADMINISTRATOR
COUNTY OF EL DORADO
STATE OF CALIFORNIA

REPLY TO:

☐ HEADQUARTE
300 FAIR LA
PLACERVIL
CA 956
530 621-56
FAX 626-80

☐ JAIL DIVISIC
300 FORNI RO
PLACERVIL
CA 956
530 621-60
FAX 626-94

☐ TAHOE PATR
1360 JOHNSON BLVD., SUITE 1
SOUTH LAKE TAH
CA 961
530 573-30
FAX 544-68

☐ TAHOE JA
1051 AL TAHOE BLV
SOUTH LAKE TAH
CA 961
530-573-30
FAX 541-67

August 19, 2019

El Dorado County Planning Department
C/O Associate Planner, Tom Purciel
2850 Fairlane Court
Placerville, CA
(530) 621-5355

Mr. Purciel,

This last week I was provided a notice from the Planning Department that an Environmental Impact Report (EIR) is going to be prepared for the Dorado Oakes Tentative Subdivision. The notice was addressed to, "Interested Parties." My Office did not initially receive the notification until we were made aware of the project through an outside party and conducted research on the matter.

The Dorado Oakes Subdivision will add 381 lots to the Diamond Springs area. Based on Point 2 Homes, a web site that calculates demographics for various counties, El Dorado County has a population of 185,826 people with 68,424 households. There is an average of three people per household in the county.

In an attempt to calculate the amount of additional law enforcement officers needed in our Operations Division to accommodate such a population increase, various web sites were researched which included references from the FBI, the International City/County Management Association, and the International Chiefs of Police Association. Using the per capita model, it was discovered agencies typically use between 1.8 to 2.6 officers per 1000 residents; however, there is no national standard.

According to EDSO's 2018 Patrol Allocation Study, the per capita staffing model, "typically recommends 1.0 – 1.5 officers per thousand capita."

It should be noted that the per-capita model is not considered as reliable as other models such as crime trend reports, minimum-manning levels, authorized/budgeted levels, and workload-based models to make staffing decisions; however, the per capita model is commonly used by agencies due to the ease in making calculations. For the purposes of this initial report, the per capita model was used, however, a more reliable study may be required should this proposed project be undertaken. In addition, this report only addresses the increase of law enforcement officers needed for such an increase in population and not the supporting staffing requirements.

Based on the above, with the addition of 381 new residences that are proposed by the Dorado Oaks Tentative Subdivision, at an average of 3 people per household, the subdivision would increase our population by 1,143 people. Using the per capita model from 1.0 to 2.6 officers per 1000 residents, the Dorado Oakes Tentative Subdivision would require anywhere from 1.14 to 2.97 additional deputies with a rough average of 2.6 deputies.

I request that my Office be included and be given the opportunity to provide input in future discussions involving this project.

Respectfully,

JOHN D'AGOSTINI
Sheriff ~ Coroner
Public Administrator

Subject: Re: Scoping meeting comment card Dorado Oaks
Date: Tuesday, August 20, 2019 at 11:13:30 PM Pacific Daylight Time
From: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>

Please print

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

On Aug 20, 2019, at 8:00 PM, DANIEL ENZLER <danielenzler@comcast.net> wrote:

---------- Original Message ----------
From: DANIEL ENZLER <danielenzler@comcast.net>
To: planning@edcgov.us
Date: August 20, 2019 at 7:58 PM
Subject: Scoping meeting comment card Dorado Oaks

After attending tonight's meeting, I have two areas of concern regarding Dorado Oaks.

First, the increased traffic that will undoubtedly impact Pleasant Valley Road, Fowler Lane, and Patterson Drive is worrisome. Pleasant Valley is already at a standstill during commute times as is Missouri Flat Road. The developer's rep estimated about 1,200 people will occupy the development at buildout. so, how much more congestion is the County willing to allow? Is there a limit?

Second, how will Diamond Springs look once this project is completed? The developer's rep was not aware or did not seem concerned about demolishing the old brick home that sits at the end of China Garden Road. It is the only building in that shopping center that has any historic value. While it may be currently sitting empty, it could be restored and add to look and feel of Main Street. The little frosty was also dismissed by the rep as being of little value. While that may be true,it appears like the developer, with the County's blessing, a cramming a cookie-cutter tract in to a place that offers little if any benefit to those already living there, while at the same time paving over the very thing that make our county unique and special.

Thank you for your time. Sincerely, Daniel Enzler

Subject: Fwd: [dorado_oaks] Diamond Springs project
Date: Monday, August 26, 2019 at 8:24:03 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Bette Lasher** <blasher1@sbcglobal.net>
Date: Sun, Aug 25, 2019 at 3:22 PM
Subject: [dorado_oaks] Diamond Springs project
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>

After being at the meeting August 20,2019, am still extremely concerned about the volume of housing units proposed. The impact on a small historical community will destroy it completely.

Traffic is already terrible and further studies should be done regarding adding the proposed amount to highway 49 and Fowler Lane, current residents will be he dramatically affected by this. What about traffic on Missouri Flat Road from Highway 49 to Walmart, it is two lane and a mess now. There was no mention of how ou were going to address the streets on the north side of highway 49, Geroges Alley will be affected as will Center Lane.

Also, the impact on the water shed to Martinez Creek will further destroy wild lands. If a fire starts in that area and heads north, this could be a disaster. Has anyone investigated the crime level in the area and what that might bring?

Since there wasn't any notice prior the the July 29,10`9 package sent out, hope that the county will provide current information to the citizens as you proceed. We do need to know and not have it dropped on us suddenly. I truly hope that you will keep the residents informed as hate to see this county look like San Jose and the Bay area. It is bad enough in Folsom seeing the hills destroyed.

Bette Lasher (Elizabeth)
3760 Georges Alley
Diamond Springs, CA 95619
blasher1@sbcglobal.net

cc: District Three Supervisor

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] Re: Dorado Oaks NOP has no Initial Study Attached or Population/Dwelling Unit estimates included

Date: Monday, August 26, 2019 at 8:24:16 AM Pacific Daylight Time

From: Tom Purciel

To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Sun, Aug 25, 2019 at 7:06 PM
Subject: [dorado_oaks] Re: Dorado Oaks NOP has no Initial Study Attached or Population/Dwelling Unit estimates included
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Cc: Tom Purciel <dorado_oaks@edcgov.us>, edc cob <edc.cob@edcgov.us>

RE: Response to your e-mail of August 6, 2019

Dear Rommel,

I have serious issues with your response regarding the need for an Initial study and failure to provide an estimate in the number of, or at least the RANGE of "Dwelling Units" that may be associated with the Project. Please be advised I will be requesting the Board direct Planning to keep the "Comment Period" open and that Planning make some demonstrable effort to educate the public via the provision of an "Initial Study" and clearer "Project Description" be provided for Public Review and participation in the Scoping Process.

Initial Study: Thank you for your interpretation of Section 15063(a) that an Initial Study is not REQUIRED. OK, fine. Strict reading is what it is. But isn't is the overall goal of CEQA and good planning procedure to do an initial analysis of the project so that Agencies and especially the PUBLIC have adequate information to help guide the SCOPING of said EIR as well as general information. You have done an extreme disservice to the Public in this case. The time and $$ possibly saved by this approach really paid off thus far and especially at the Scoping "Meeting" on August 20, which was an abysmal failure that technically met the "word" of the law, but clearly failed in the intent.

Estimated Dwelling Units: Without an estimated RANGE of potential number or at least a range of potential Dwelling Units gives no real meaningful baseline to analyze the Project? This number/range should have been calculated and included in the Project Description in the NOP. It was not and you are still resisting disclosure of this Number/Range. Why are you withholding this information? The only clear appearance of this resistance that I and members of the public can conclude, is you don't want people to understand the scope of and Potentially Significant Environmental Impacts associated with this project. Please don't suggest that I calculate it as that is not my job, it is the Planning Department's task.

Really we have the same answer to both questions; it appears that Planning is deliberately withholding information from the Public who are ultimately paying the bill for this project. (Please spare me the "Fees Offset the Staff Time" argument as we know they don't pay the true costs such as Sick pay, Health Coverage, PERS etc). Additionally there is the intent of

CEQA to encourage public participation found in and around CEQA Section 21,000-21,006 and Guidelines 15,001-15,006. So far a really good case could be made that Planning Staff is not meeting the intent, and perhaps Statutory Requirements of the cited Sections. Regardless, it appear disingenuous at best. Why? Why not provide this information so Agencies and the Public can participate in this process with needed information.

I anxiously await your answer to these two questions. Better yet, provide an Initial Study and Dwelling Unit Range and we can get on with the openness we deserve. We have wasted 2 weeks with this resistance to a logical and needed provision of information to the Public Review Process.

Thank you,

Ken Greenwood
Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

From: "Rommel Pabalinas" <rommel.pabalinas@edcgov.us>
To: "Ken Greenwood" <krg@d-web.com>
Cc: "Tom Purciel" <dorado_oaks@edcgov.us>, "edc cob" <edc.cob@edcgov.us>
Sent: Tuesday, August 6, 2019 9:27:48 AM
Subject: Re: Dorado Oaks NOP has no Initial Study Attached or Population/Dwelling Unit estimates included

I am responding to your inquiry below which was also sent via a separate email.

Regarding the absence of the Initial Study, per CEQA Guidelines 15063(a): Following preliminary review, the Lead Agency shall conduct an Initial Study to determine if the project may have a significant effect on the environment. If the Lead Agency can determine that an EIR will clearly be required for the project, an Initial Study is not required.

The Planning Department has determined that the project would require an Environmental Impact Report (EIR). Similarly, the previous version of the project (Stonehenge Springs Tentative Subdivision Map), which was withdrawn and replaced with this project, was also determined to have an EIR.

Your comments on the project regarding the units, staff will accept these comments and will be analyzed as part of the EIR. Should you have any additional comments, please send to the designated email for the project.

Lastly, a minor correction, the assigned planner is Tom Purciel not Dave Purciel.

On Mon, Aug 5, 2019 at 4:32 PM Ken Greenwood <krg@d-web.com> wrote:

> Dear Planning,
>
> I am in receipt of the Notice of Preparation for the Dorado Oaks Subdivision via e-mail notice of July 29, 2019.
>
> After review of the Document and attachments, I notice the following:
>
> > The Project Description has no hard information on the potential number of "Dwelling

Units" the Project may encompass.

- Yes, there are 156 Single Family and 225 Multi-Family Lots proposed. However, it is unclear how many "Dwelling Units" (and therefore population/trips per day generation, etc.) there will be in the Project.

- You have not done any math on the # of units possible on the 225 "Multi-Family" lots. Therefore the Public cannot possibly understand, analyze nor quantify the Impacts of the Project. **What are these numbers?**

ADDITIONALLY (and subject of my August 2, 2019 E-mail request):

> I am wondering where the "Initial Study" (IS) for the Project is located? CEQA Process suggests the IS be attached to the NOP so that the public, Responsible and Effected Agencies would have documentation of the potentially significant Environmental Impacts of the Project identified by the Lead Agency triggering the need for the EIR. There is a Scoping Meeting on August 20 that will be facilitated greatly by the provision of this IS to me and the Public in general.

Without this document being available, the Public is effectively left out of the Planing Process as the rational for the EIR is triggered by the Initial Study that was prepared some time ago for the "Early Consultation" by Agencies.

> Where is the Initial Study for this Project?

Therefore: **Please recirculate your notice** and include the Initial Study and Dwelling Unit/Population estimations so the Public and Agencies may be better informed and involved in the Planning Process as described in CEQA and the CA Government Code.

> An extension of the Comment Period is appropriate given this SEVEN DAY delay in providing this vital information to the Public.

Thank you for your immediate response to this request.

Sincerely,

Ken R. Greenwood

Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

CC: Clerk of the Board of Supervisors

--

==========

Rommel (Mel) Pabalinas, Principal Planner

El Dorado County Community Development Services
Planning and Building Department
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

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--

Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
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(530) 621-5903
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https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"

Date: Monday, August 26, 2019 at 8:24:47 AM Pacific Daylight Time

From: Tom Purciel

To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Mon, Aug 26, 2019 at 1:52 AM
Subject: [dorado_oaks] Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"
To: edc cob <edc.cob@edcgov.us>
Cc: Tom Purciel <dorado_oaks@edcgov.us>, Rommel Pabalinas <Rommel.Pabalinas@edcgov.us>

Dear Board of Supervisors,

The Dorado Oaks Subdivision and Rezone application was the subject of a "Public Information/Scoping Meeting" last Tuesday August 20 at the Fireman's Memorial Hall in Diamond Springs. The 'meeting' was incredibly non-informative and an abuse of process according to many who attended and published substantive comments on Social Media. Additionally, I am told that Planning Staff decided to start the meeting at approximately 5:30 because so many people showed up... Really? Who does that for a meeting widely advertised as beginning at 6:00 PM?

For this and other reasons detailed below, I and others request the "Comment Period" for the EIR/NOP Scoping process be extended. It would also behoove the Planning Department to hold another meeting ASAP to facilitate this process. The Public has been dis-served by the current process. It turned into the "Cluster" I warned you about two weeks ago.

I have already been told there will be "plenty of opportunities to comment in the future" on the adequacy of the Environmental Documentation and such. Indeed there will be opportunities to comment on the Draft EIR. the Final EIR and of course the Planning Commission and Board Public Hearings during consideration of the Project itself. The HUGE problem here as those events are 1, 2 or more years from now and that time factor allows a lot to be "etched in stone" from so many perspectives. "Projects" tend to create and attain a life of their own and "Public Comment" at later points in time is purely REACTIONARY to some fairly obvious mistakes in analysis of "Environmental Impacts" that could be avoided by EARLY INVOLVEMENT by the public and agencies that may be driven by their management or Governing Boards based on Public concern from their constituents.

My whole point is that in the Planning Process required by State Law works better with MORE information and public involvement vs less! You have seen "angry mobs with torches and pitchforks" show up for Hearings and you know that most of their concerns "shoulda and coulda" been dealt with MUCH earlier in the Process had they been informed and involved in the project vs response and REACTION at the hearing or elsewhere LATER in the process. That is what the CEQA Process is supposed to do and when done correctly and with honest attempts to foster public involvement, Projects go through the process smoother and some

really good ideas can be included BEFORE momentum is attained.

Additionally there is the intent of CEQA to encourage public participation found in and around CEQA Section 21,000-21,006 and Guidelines 15,001-15,006. So far a really good case could be made that Planning Staff is not meeting the intent, and perhaps Statutory Requirements of the cited Sections. Regardless, it appear disingenuous at best and there are several comments in Social Media that the Planning Department was just going through the motions. I would have to agree and add that they hardly attained the minimal motions. Is there any wonder El Dorado County Land Use Decisions are the subject of so many SUCCESSFUL lawsuits? It's quite clear to me (and obviously the Courts!).

Here is the NOP/Info Meeting as "Advertised" by EDCo Planning:
https://edcgov.us/Government/planning/public%20notices/Documents/2019/20190729_DoradoOaks_NOP.pdf

Some specific issues:

- The Meeting was advertised to be from 6-8 PM. As above and below, people were very confused as there was no PA system to allow anyone to EFFECTIVELY communicate as the room was extremely noisy and there was little or no assistance from either Planning Staff or the Project Applicants to guide people to the various "Break Out Tables" for more specific information.

- The meeting actually was started at approximately 5:30 "because so many had already showed-up" as justification. That is simply unfathomable and a disservice to all in attendance. At 5:55 I arrived and there were 20+ people in line at the sign in table and more coming in.

- The Planning Department did not take my heartfelt and professional advice to video or audio record the meeting, provide a Power Point presentation or paper maps showing the project and adjacent parcelization so people could ask and see "How close am I to the Project." "Where are the access points?" "How many Dwelling Units? (To gauge the traffic impacts and such.) NONE of that was provided in any effective way. The people at the "Land Use" table were unable to answer that question.
    - When I asked that SAME QUESTION in an e-mail August 5, I received a response as follows: **"Your comments on the project regarding the units, staff will accept these comments and will be analyzed as part of the EIR."** Seriously? That is information that should be in the "Project Description" that should have been defined once the Application was considered "Complete" by Planning Staff back in November 2018!

- The "Break Out Tables" had no indication above eye level describing what was going on at that table. The tables each had an 8 1/2 X 11 paper with maybe 40 point type taped to the edge of the table. As it was a "Standing Room Seating" no one could actually see these signs and therefore most had no idea of where to go for information. The "Signs" should have been MUCH BIGGER and attached to the wall above the tables.

- Why was Craig Sandberg (the applicant's Attorney) giving the "Project Overview" (that really wasn't a "Project Overview") and more of a "General Plan Designation and Zoning are in place, the project has been considered previously" and inferred that it is essentially a done deal at this point... Again I can only say, **SERIOUSLY?** Who does

that? I was appalled as were a number of people in the room.

Ah!

- There was one bright spot and that was the "CEQA Flowchart" (that I just can't seem to find anywhere else) showing the various CEQA steps AND the "Local Agency" hearings included. As there was no staff at the graphic, so I stood near it and provided clarification as to "We are here in the process at this time." People really appreciated that they were getting some "hard facts" they said were not being provided elsewhere in the room.

Some comments from Facebook (El Dorado County Chat) after the meeting: (One of the Posts have 450 Comments, several have 100+ and many of them are actually cogent and thoughtful. Some are people who sadly learned little or nothing at the meeting regarding process, which SHOULD have been explained at the beginning of the meeting.)

> "That meeting was not really helpful, and so difficult to even hear anyone. It's too bad a lot of people attended and would have been nice had it been better organized."

> "Yeah it wasn't great. However I do think it was more about fielding complaints and getting back with answers. So responsible just poorly planned especially for a planning committee"

> "Nobody gets to vote on it, and that's part of the problem. They seek public input, *but the impression left at Tuesday's meeting was that it doesn't matter what the public thinks, even if 90% of the residents of the area oppose this development, it's going to happen.* Too much money to be made by the developer and the county in terms of new tax revenues, the public's opinion means nothing."

> "We wrote Comment cards but we heard that no one's going to pay attention to them. So who do we send our email or letter to that we know would count? I was also told that if you signed a petition it counts as one comment. This whole thing was maddening. There was no questions and answers. I never got any answers about my house with the red line going through it."

> There's a Board of Supervisors meeting on Tuesday at nine sharp. I am definitely going to go there because *I went to the meeting at the fire department and I got absolutely no answers no help.* I am very distraught right now. I moved in this house when I was 39 and now I'm 73 and I'm thinking where am I going to go??

These don't sound like people who got the message at the Scoping Meeting... Why? BECAUSE THEY DIDN'T get the message as it was poorly presented, if at all.

As a former Planner who conducted my share of such meetings, it was really hard to watch it so poorly done. I even gave Staff some pre-meeting advice and ideas that would have REALLY made a difference. Sadly it was not to be.

Thank you for consideration of my request to extend the comment period. Somebody needs to do something about the management of this project.

Sincerely,

Ken Greenwood
Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

--

Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: Fw: Dorado Oaks Proposal
Date: Monday, August 26, 2019 at 8:49:02 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Planning Department** <planning@edcgov.us>
Date: Mon, Aug 26, 2019 at 8:40 AM
Subject: Fwd: Fw: Dorado Oaks Proposal
To: Tom Purciel <tom.purciel@edcgov.us>
Cc: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

---------- Forwarded message ---------
From: **michelle hansen** <michelleh2294@yahoo.com>
Date: Sun, Aug 25, 2019 at 11:30 PM
Subject: Fw: Dorado Oaks Proposal
To: planning@edcgov.us <planning@edcgov.us>
Cc: bldgdept@edcgov.us <bldgdept@edcgov.us>

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: bosthree@edcgov.us <bosthree@edcgov.us>
Cc: bosfour@edcgov.us <bosfour@edcgov.us>; bosfive@edcgov.us <bosfive@edcgov.us>
Sent: Sunday, August 25, 2019, 10:35:08 AM PDT
Subject: Fw: Dorado Oaks Proposal

----- Forwarded Message -----
From: michelle hansen <michelleh2294@yahoo.com>
To: bosone@edcgov.us <bosone@edcgov.us>
Cc: bostwo@edcgov.us <bostwo@edcgov.us>
Sent: Sunday, August 25, 2019, 10:32:42 AM PDT
Subject: Dorado Oaks Proposal

Dear Sirs:

First I would like to say that myself and many who attended the meeting on August 20th, were very disappointed and alot of us were mad. This meeting was run so poorly, it was completely insufficient, We were not given a chance to speak and then we heard that the comment sheets we filled out would not be considered,,,so that's why I am writing this letter.

It is my understanding that some of the reports that need to be done , have not been done..EIR mainly.

No one has considered the residents of Diamond Springs that already live in the adjacent neighborhoods, and the huge impact it will have on our homes, and our quality of life..

The infrastructure on Pleasant Valley is not set up for this massive, high density project...It will create huge traffic jams, and not only a fire danger to all that live around here, but a Fire Trap.

Those of us that live in Diamond Springs enjoy and appreciate our small, rural historical town, this project would completely destroy all of that.

This type of invasion of homes, people , and cars and the overcrowding it will cause needs to go somewhere else, where the impact will be less.

Please Don't Let This Happen

Thank you for your time on this matter,

Sincerely,

Michelle Hansen

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Dorado Oaks Planned Development
Date: Wednesday, August 21, 2019 at 7:12:12 AM Pacific Daylight Time
From: Mitchell A. Goodis, DDS
To: LudkyFCar@gamil.com, Rascalone@sbcglobal.net, Tiffany@subseasystems.com, SBK@yahoo.com, Michelle Smira Brattmiller, Resposito@mtdemocrat.net, Sue-Taylor@comcast.net, Dave@mtpass.net, Audrey Goodis, Bob and Diana Steele, Phil Hartvig, philip hartvig, bldgdept@edcgov.us, planning@edcgov.us
Category: Dorado Oaks
Attachments: Planning Commission Letter re Dorado Oaks.docx, Dorado Oaks Traffic Management Map.jpg

This note involves an analysis of the planned development known as Dorado Oaks.
Please see the attached letter and map detailing my suggestions to the developers, the Planning Commission, and the El Dorado County Board of Supervisors.

As you know, the developers met with members of the community at the Diamond Springs Fire Hall last night. The developer and owner of the land was greeted with shouts of "GO HOME" and "WE DON"T WANT YOU HERE". It went downhill from there.

Relying on maps and 'plans' developed by a group from Chula Vista, the developers, none of whom live anywhere near Diamond Springs (more or less in El Dorado County), propose to rip out the heart of this small town by destroying Deb's Frosty and Diamond Center as well as the homes on the North side of Rt 49 to place a traffic circle in the center of town.

As we all well know, the road through Diamond Springs was not and never can be made to accept the 1000+ cars that will be exiting Dorado Oaks during the morning, afternoon and then evening rush hours!.
If you made that road two lanes each way, people would be driving on the sidewalks!
And:
Missouri Flat Road is already at capacity.

The issue being that the exit strategy for Dorado Oaks is ill conceived and not functional

The only acceptable exit proposal would be to exit from the West Side of the Development through planned roads (D STREET) and cut across the undeveloped land (that is zoned HIGH DENSITY RESIDENTIAL)
and exit onto State Highway 49 just WEST of the existing Mobile Home Park. The land there is mostly vacant and a traffic circle could easily be built at that location.

Discussions with persons in the know state that the owner of that vacant lot does not want to 'give' permission to build a road through or around his property! .
Apparently this 'exit strategy' was the original plan from the Dorado Oaks developers. Being turned down by the vacant lot owner, they hired an engineering firm to plan an exit through Diamond Springs, a plan that will create a traffic jam of biblical proportions.

HOWEVER, there is already a High Density Residental development planned for that now vacant lot.

The owners of those two lots need to get together and build a road off of the planned D STREET that would benefit both developers, meld with the TWO PLANNED DEVELOPMENTS and have an acceptable traffic flow through the area. They could meet at Deb's Frosty and discuss what should be done. This could be a Win-Win-WIn situation for the two developers and for the town of Diamond Springs.

As I see it, it comes down to a matter of how much who wants to pay whom for rights to have SENSIBLE roads placed for traffic exiting Dorado Oaks.

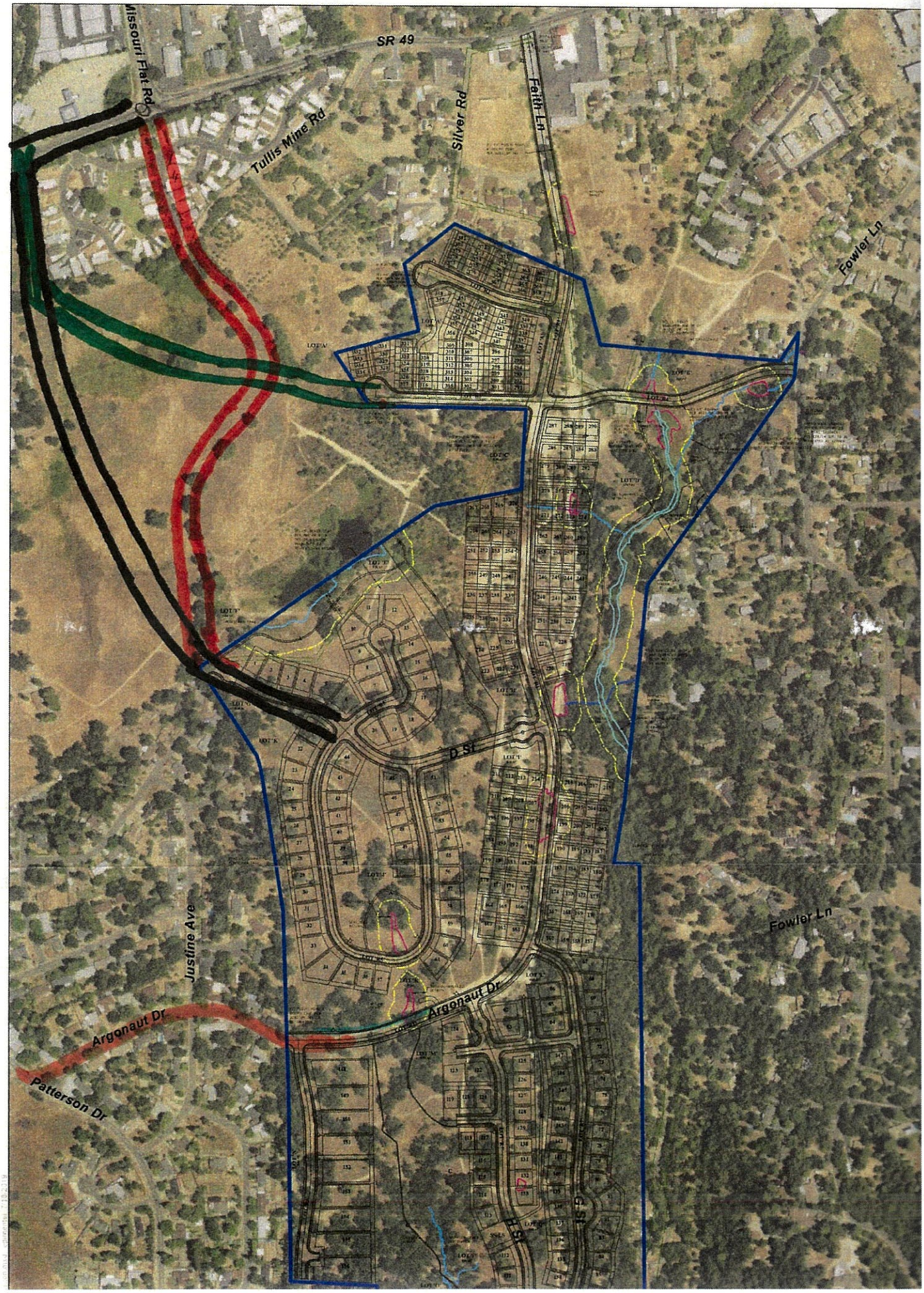
AGAIN: Destroying Deb's Frosty, Diamond Center, and putting in so much traffic on the road in front of Independence High School is NOT IN THE BEST INTEREST OF THE COMMUNITY AND ITS RESIDENTS.

Please realize here that we are talking about not one, but FOUR planned developments. (Two in the heart of Diamond Springs, one across from Diamond Parkway that is under construction and one in El Dorado that will also contribute to the traffic problems) This adds approximately 3,000 cars/day to our local roads. These developers come to town from Marin and Chula Vista and El Cerritos one at a time and propose to clog up our roads, insisting that the traffic flow is manageable. It is not! They higher 'analysts' and pay to conduct 'surveys' that do not take into consideration future planned developments that have not yet been presented to the Planning Commission. They present a very narrow view of the overall situation.

Remember this: Good planning takes everything into consideration and proceeds without destroying towns along the way!

Mitchell A. Goodis, DDS, Lt Col, USAF, DC, (ret)
Don't forget to brush and floss!
(530) 647-2368 h
(530) 306-9340 c


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SR 49
Missouri Flat Rd
Tullis Mine Rd
Silver Rd
Faith Ln
Fowler Ln
D St
Justine Ave
Argonaut Dr
Patterson Dr
G St

Subject: Fwd: [dorado_oaks] Scoping Meeting Report Diamond Springs. Dated July 29, 2019
Date: Wednesday, August 21, 2019 at 8:49:34 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Bruce Turner** <turner2000@yahoo.com>
Date: Tue, Aug 20, 2019 at 4:30 PM
Subject: Re: [dorado_oaks] Scoping Meeting Report Diamond Springs. Dated July 29, 2019
To: Tom Purciel <tom.purciel@edcgov.us>

Tom, this does not address my question..

"I have been reading the the information sent to me by your office and I see on page 5 under Project Overview item 2 end of paragraph a missing sentence after the word "and"" would you please email me the competed sentence . Thank you Bruce Turner 530 626 0940

On Friday, August 16, 2019, 11:36:41 AM PDT, Tom Purciel <tom.purciel@edcgov.us> wrote:

Hi Bruce,

Below is the entire paragraph from the document containing the text you were unable to view. Note: If you would like to submit comments regarding this project or item(s) that you feel should be addressed in the project's Environmental Impact Report (EIR), please submit written comments on or before the due date shown on the Scoping Meeting notice. Comments should be sent to the project email address: dorado_oaks@edcgov.us.

Regards,

Tom Purciel - Project Planner

Project Overview - Dorado Oaks Tentative Subdivision Map Site

The Dorado Oaks Subdivision consists of the following entitlement requests:

1. A Rezone of an 8.94-acre portion of the 142.3-acre project site from Residential, Multi-Unit (RM) to Residential, Multi-Unit - Planned Development (RM-PD);

2. A Phased Tentative Subdivision Map, consisting of 14 Large Lots, to subdivide the 142-acre property into 156 single-family lots ranging in size from 6,000 square feet to approximately 24,000 square feet, 225 multi-family lots ranging in size from approximately 2,800 square feet to 8,800 square feet and 20 open space/landscape lots; and

3. A Planned Development Permit to establish an official Development Plan for Dorado Oaks Subdivision that includes modification to specific development standards in the RM zone district for 91 of the proposed multi-family lots on an 8.94-acre portion of the project site.

On Thu, Aug 15, 2019 at 11:29 AM 'Bruce Turner' via PL-dorado_oaks-m <dorado_oaks@edcgov.us> wrote:

> I have been reading the the information sent to me by your office and I see on page 5 under Project Overview item 2 end of paragraph a missing sentence after the word "and" would you please email me the competed sentence . Thank you Bruce Turner 530 626 0940

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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--
Tom Purciel
Associate Planner

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Subject: Fwd: [dorado_oaks] Traffic Study - Dorado Oaks
Date: Wednesday, August 21, 2019 at 8:58:03 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Ren Strong** <alewench@gmail.com>
Date: Tue, Aug 20, 2019 at 8:13 PM
Subject: [dorado_oaks] Traffic Study - Dorado Oaks
To: <dorado_oaks@edcgov.us>

Hi there -

At the scoping meeting on August 20, one of the gentlemen I spoke with referenced an updated traffic study that was done within the last year. I couldn't find this document on the County's website. Can you please email me a link to the report?

Thanks,
Ren

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: Scoping meeting comment card Dorado Oaks
Date: Wednesday, August 21, 2019 at 8:58:18 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Planning Department** <planning@edcgov.us>
Date: Wed, Aug 21, 2019 at 8:03 AM
Subject: Fwd: Scoping meeting comment card Dorado Oaks
To: Tom Purciel <tom.purciel@edcgov.us>, Rommel Pabalinas <rommel.pabalinas@edcgov.us>

---------- Forwarded message ---------
From: **DANIEL ENZLER** <danielenzler@comcast.net>
Date: Tue, Aug 20, 2019 at 7:58 PM
Subject: Scoping meeting comment card Dorado Oaks
To: <planning@edcgov.us>

After attending tonight's meeting, I have two areas of concern regarding Dorado Oaks.

First, the increased traffic that will undoubtedly impact Pleasant Valley Road, Fowler Lane, and Patterson Drive is worrisome. Pleasant Valley is already at a standstill during commute times as is Missouri Flat Road. The developer's rep estimated about 1,200 people will occupy the development at buildout. so, how much more congestion is the County willing to allow? Is there a limit?

Second, how will Diamond Springs look once this project is completed? The developer's rep was not aware or did not seem concerned about demolishing the old brick home that sits at the end of China Garden Road. It is the only building in that shopping center that has any historic value. While it may be currently sitting empty, it could be restored and add to look and feel of Main Street. The little frosty was also dismissed by the rep as being of little value. While that may be true,it appears like the developer, with the County's blessing, a cramming a cookie-cutter tract in to a place that offers little if any benefit to those already living there, while at the same time paving over the very thing that make our county unique and special.

Thank you for your time. Sincerely, Daniel Enzler

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667

(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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DIAMOND SPRINGS AND EL DORADO COMMUNITY ADVISORY COMMITTEE

Tom Purciel, Associate Planner
El Dorado Planning Services
2850 Fair Lane Ct
Placerville, CA 95667

Re: TM18-1538 – Dorado Oaks

Aug. 16, 2019

Dear Mr. Purciel

At our meeting of August 15,2019, our committee considered the subject development project for the purpose of providing comments regarding the scope of the EIR for the project, and received input from community members in attendance. Outlined below are the areas of concern that were identified during that discussion, and are items that we feel must be included for analysis within the scope of the environmental impact report:

- Of primary concern is the projects road circulation system, and whether or not it is consistent with the "Diamond Springs and El Dorado Area Mobility and Livable Community Plan". This study was produced in 2014 by the El Dorado County Transportation Commission, and among other things, concerns the traffic circulation system within the Diamond Springs and El Dorado Communities. A critical component of which is the Union Mine Road Connector, which is intended to provide parallel capacity to Pleasant Valley Road between Fowler Lane in Diamond Springs, and ultimately connect all the way to Hwy 49 south of the town of El Dorado. It is imperative that this project be consistent with that plan, and that its street system connect from Fowler Lane all the way to Patterson Drive via Argonaut Way in Deer Park, and that the streets be designed and constructed as relatively continuous collector streets. Because of the anticipated change in character of Argonaut Way from local street to minor collector, we feel that the traffic analysis should include the mitigation measure of incorporating concrete sidewalks on one/or both sides of Argonaut Way to facilitate pedestrian circulation.

- The recreation component of the EIR should analyze the feasibility of incorporating a continuous network of class 1 bike and pedestrian trails should be incorporated into open space areas of the project.
- Pleasant Valley Rd through downtown Diamond Springs is heavily congested, and at times it can be almost impossible to make a left turn onto that road from a side street or driveway encroachment. We think the traffic analysis must clearly address the reality of the congestion in Diamond Springs that the residents have to live with every day. The development of this project as proposed will make Pleasant Valley Road intolerable for existing residents, as well as the future residents of the project. The Committee members were generally supportive of the development of a roundabout at the intersection of Faith Lane and Pleasant Valley Road; however, we do recognize the need to align Faith Lane with China Garden Rd, and the potential that that creates to adversely impact an existing historical brick building. The analysis should investigate the possibility of creating a roundabout, or perhaps an "oval-about" that can help to alleviate traffic congestion without impacting historic buildings.
- The proposed multi-family units of the project are very dense, and it is not clear how adequate access to the units will be provided, both for normal ingress and egress, as well as access by emergency service providers. We request that the traffic analysis look at the project's internal street system and show how circulation will be provided to these units. The number of units should be reduced if necessary so that adequate access can be provided.
- The EIR should analyze the impact of this project on local recreation facilities. A project of this size must have an active recreation public park on the project, for the use of all local residents in order to mitigate it's impacts on existing recreation facilities.
- Wild fire safety is extremely important, and recent fires in the State and our community demonstrate just how vulnerable we all are. Projects such as Dorado Oaks throughout this county have been typically designed as "silos" that have limited connections to surrounding street systems to minimize objections from surrounding residents, and thereby increase the project's chances of approval. The problem with this strategy is that it creates extremely hazardous choke-points when evacuations become necessary in the event of a wildfire. We feel that the project as designed creates a hazardous situation during a wildfire, and that the EIR should analyze the internal street system, and determine the possibility of providing additional street connections to both Fowler lane, and the streets within the Deer Park Subdivision. These connections should be full, open, street intersections, and not gated emergency vehicle access points. Multiple avenues of escape from a wild fire have been proven to be critically important, and multiple road connections would enhance safety for all residents. This project should also have a comprehensive fire safe plan that includes vegetation thinning around the project perimeter.
- Many years ago, the Motherlode School District closed down Charles Brown Elementary School due to inadequate student load to justify its continued operation. The development of this project, together with other proposed residential projects within the Diamond Springs area could adversely impact the School District, and require the re-opening of Charles Brown School. This potential impact should be incorporated into the scope of the EIR. We would support the re-opening of the Charles Brown School because we feel that it is important for the children in the Diamond Springs/ El Dorado communities to have a school within their community that they can attend.

Thank you for the opportunity to provide input on the scope of the EIR for this project. We hereby request to receive a copy of the draft EIR, and written notification of any future meetings, or hearings, related to this project.

Sincerely,

Randy Pesses, Chairman

cc: Brian Veerkamp, District III Supervisor

Subject: RE: Dorado Oaks EIR
Date: Thursday, August 22, 2019 at 9:41:28 AM Pacific Daylight Time
From: Luke Evans
To: gloriahb@comcast.net
CC: Tom Purciel (tom.purciel@edcgov.us), Michelle Smira Brattmiller
Category: Dorado Oaks

Gloria,
It was good talking with you the other night. I'm also cc'ing Tom Purciel with the County and Michelle Brattmillar with the applicant team to make sure your contact info is in the database for future notices, etc. We are at least several months out from release of the Draft EIR, but if you're in the database, you'll receive notice when it is released.

As for the likelihood of subsurface deposits in the vicinity of the SR-49 intersection site, we would characterize that area as highly sensitive for subsurface cultural resources. Besides the brick building, there is also the cemetery immediately adjacent to the roadway and several other historic structures in the vicinity. The area has clearly been in use for a very long time. Since that aspect of the project would fall under the auspices of Caltrans (work on a State Highway), I would expect that there will be a requirement for a monitoring plan during demolition and excavation. We have yet to fully engage with Caltrans, but I work with them regularly and am familiar with their requirements, and I would expect a rigorous review from them, along with specific requirements for mitigation. Thanks for your interest in the project, and your thoughtful comments.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

-----Original Message-----
From: Gloria Brown [mailto:gloriahb@comcast.net]
Sent: Thursday, August 22, 2019 4:49 AM
To: Luke Evans <LEvans@esassoc.com>
Subject: Dorado Oaks EIR

Hello Mr. Evans,
I'm getting ready to leave town for a couple of days, and I want to make sure to request the EIR for the proposed Dorado Oaks development before I leave. I'm looking forward to reading through it.
I spoke with a co-worker who helped excavate a brewery site in Placerville a few years ago.
He says that they found quite a bit of it in intact buried deposits, even though there were no visible signs on the surface. He expects that if the historic brick buildings are demolished and the road/roundabout are put through there, you should expect to encounter buried deposits in their vicinity, including privies. I hope your team has looked at them from an archaeological perspective as well as an architectural one. Additionally, as I pointed out at the meeting, looking at Diamond Springs as a whole, perhaps as a historic district, the fact that they are the only remaining brick buildings increases their historic significance.
Thank you for sending me the EIR, and thanks for your time listening to my concerns and responding in a thougthful way.
Sincerely,
Gloria Howat Brown

Subject: Contacts from Meeting
Date: Thursday, August 22, 2019 at 5:54:32 PM Pacific Daylight Time
From: ballen@ctaes.net
To: Michelle Smira Brattmiller
Category: Dorado Oaks
Attachments: image003.jpg

Michelle,
I had a couple of notes from the NOP about people that I wanted to pass along:

1) Rose Taylor gave me her contact info at the NOP for Dorado Oaks. She is particularly concerned and affected by the Pleasant Valley Road work that could occur in front of her home. She lives in an old house on the cemetery parcel North of Pleasant Valley Road. The APE (red line as she calls it) goes right through her house. She assumed that meant we might have to take her house or property. I explained that was just the study area and assured her there was very little chance that the project would become a significant issue for her. But I told her we would keep in touch and meet with her to explain things in more detail as we move along so she would not be so fearful of what is happening. We should check in with her from time to time.....I think she has been active on social media if I remember right. She was actually very nice and I think is just very scared. Her phone number is 530-417-1546.
2) Terry Tawney suggested we connect a road from our project to Antares Drive. A unique comment that I'm sure he submitted. He seemed like a reasonable guy with some ideas.
3) Gloria (no last name) was suggesting an alternate intersection on a skewed angle between Faith Lane and China Garden. She was submitting comments. As I spoke to her further with Luke, it became clear she was very educated. She claims to be a botanist and archaeologist so she was asking a lot of specific questions. Obviously she knows very well what she is looking at and how to critique the project. I didn't sense any animosity, but be aware she is very capable and knowledgeable it appears.

Brian M. Allen, P.E.

cta Engineering & Surveying 40 years
Civil Engineering ▪ Land Surveying ▪ Land Planning

3233 Monier Circle, Rancho Cordova, CA 95742
P (916) 638-0919 | F (916) 638-2479 | www.ctaes.net

Subject: Fwd: [dorado_oaks] *REVISED RECIPIENT* - Dorado Oaks - SCH# 2019071041
Date: Monday, August 26, 2019 at 12:05:53 PM Pacific Daylight Time
From: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>
Attachments: image002.jpg, ATT00001.htm, Dorado Oaks Comments 8-26-19 - Signed.pdf, ATT00002.htm

Please print

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

Begin forwarded message:

From: Tom Purciel <tom.purciel@edcgov.us>
Date: August 26, 2019 at 11:35:01 AM PDT
To: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
Subject: Fwd: [dorado_oaks] *REVISED RECIPIENT* - Dorado Oaks - SCH# 2019071041

Note revised recipient for your records.

---------- Forwarded message ---------
From: **Moran, Amber@DOT** <Amber.Moran@dot.ca.gov>
Date: Mon, Aug 26, 2019 at 11:34 AM
Subject: [dorado_oaks] *REVISED RECIPIENT* - Dorado Oaks - SCH# 2019071041
To: dorado_oaks@edcgov.us <dorado_oaks@edcgov.us>
Cc: State.Clearinghouse@opr.ca.gov <State.Clearinghouse@opr.ca.gov>, Natalie.Porter@edcgov.us <Natalie.Porter@edcgov.us>

Mr. Tom Purciel,

Thank you for including the California Department of Transportation (Caltrans) in the Notice of Preparation of a Draft Environmental Impact Report review process for the project referenced above. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

The attached comments are based on the Notice of Preparation of a Draft Environmental Impact Report documents received.

Please provide our office with copies of any further actions regarding this project or future development of the property. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any question regarding these comments or require additional information, please contact me.

Thank you,

Amber Moran

District 3 - Transportation Planner

Regional Liaison - East

703 B Street

Marysville, CA. 95901

530-634-7624

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-4233
FAX (530) 741-4245
TTY 711
www.dot.ca.gov/dist3

Making Conservation a California Way of Life.

August 26, 2019

GTS# 03-ED-2016-00149
03-ED-50 PM 11.512
SCH# 2019071041

Tom Purciel, Associate Planner
El Dorado County
2850 Fairlane Court, Building C
Placerville, CA 95667

Dorado Oaks (Stonehenge Springs)

Dear Mr. Tom Purciel:

Thank you for including the California Department of Transportation (Caltrans) in the Notice of Preparation of a Draft Environmental Impact Report review process for the project referenced above. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development - Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

The Dorado Oaks project is located southeast of the intersection of Missouri Flat Road and Pleasant Valley Road at the southern terminus of Faith Lane in the Community Region of Diamond Springs. The project proposes approximately 361 single family detached lots. 51 lettered lots (landscape, open space, recreation facilities and clubhouse).

The following comments are based upon the Notice of Preparation of a Draft Environmental Impact Report documents received.

Traffic Operations – Highway

The below comments are made on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) and Notice of Public (NOP) Scoping Meeting for the Dorado Oaks Tentative Subdivision Map, dated July 29, 2019.

• Caltrans previously reviewed and commented on the Transportation Impact Study (TIS) – Draft Report for Dorado Oaks, in El Dorado County, CA, dated July 2, 2018, by Prism Engineering prepared for the proposed Project.

• Caltrans also concurred with all the comments documented in the Memorandum to Katie Jackson, PE, TE, and Natalie Porter, PE, TE entitled Peer Review of the Dorado Oaks Transportation Impact Study, dated July 19, 2018, by DKS Associates.

• Caltrans would like an updated TIS as part of the DEIR that addresses all comments made by the County of El Dorado, DKS, and Caltrans.

• The NOP project land use is different than the TIS project land use, dated July 2, 2018. NOP land use and TIS land use should be consistent.

• The DEIR proposes SR 49 (Pleasant Valley Road) at Silver Road/Faith Lane/China Garden Road intersection improvements. Please include an Intersection Control Evaluation, based on Caltrans Policy Directive 13-02 for these intersection improvements.

• Any work within Caltrans right of way may require an encroachment permit.

Model & Forecasting

Model & Forecasting agrees with comments provided by Traffic Operations - Highway. An updated TIS should be completed in which no build volume on project opening day and no build + project volume on opening day should be added. My comments from the draft TIS review stage should also be included.

Traffic Operations - Encroachment Permits

The project limit is outside the State highway system right of way. However, If other Caltrans functional units request mitigation measures, then an encroachment permit will be required.

Highway Maintenance

Work (including sidewalks and roundabouts) will require a Maintenance Agreement, and all work must be maintained by the agency. Construction work must meet Caltrans Standard Plans and Specifications within the State Route 49.

Hydraulics

This project will potentially result in an increase in peak surface water runoff due to construction of buildings and parking, roads etc. and an increase in impermeable surface area. Peak runoff discharge for the 10 and 100-year storm events to the State's highway right of way and to Caltrans' highway drainage facilities must be reduced to at or below the pre-construction levels. This may be accomplished through the implementation of storm water management Best Management Practices (i.e., detention/retention ponds or basins, sub-surface galleries, on-site storage and/or infiltration ditches, etc.). Once installed, the property owner must properly maintain these systems. The proponent/developer may be held liable for future damages due to

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Subject: Fwd: Dorado Oaks - SCH# 2019071041
Date: Monday, August 26, 2019 at 12:07:38 PM Pacific Daylight Time
From: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>
Attachments: image002.jpg, ATT00001.htm, Dorado Oaks Comments 8-26-19 - Signed.pdf, ATT00002.htm

Please print

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

Begin forwarded message:

From: Tom Purciel <tom.purciel@edcgov.us>
Date: August 26, 2019 at 11:13:17 AM PDT
To: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
Subject: Fwd: Dorado Oaks - SCH# 2019071041

For your records. Note: Although Caltrans' comment letter was addressed to Efren in my office, I spoke with Ms. Moran at Caltrans and she assured me future Caltrans correspondence will be sent to my attention per information on the NOP.

---------- Forwarded message ---------
From: **Efren Sanchez** <efren.sanchez@edcgov.us>
Date: Mon, Aug 26, 2019 at 11:00 AM
Subject: Fwd: Dorado Oaks - SCH# 2019071041
To: Tom Purciel <tom.purciel@edcgov.us>

Hello Tom,

I am forwarding you this email from Caltrans.

Thank you,

---------- Forwarded message ---------
From: **Moran, Amber@DOT** <Amber.Moran@dot.ca.gov>
Date: Mon, Aug 26, 2019 at 10:28 AM
Subject: Dorado Oaks - SCH# 2019071041
To: efren.sanchez@edcgov.us <efren.sanchez@edcgov.us>
Cc: State.Clearinghouse@opr.ca.gov <State.Clearinghouse@opr.ca.gov>, Natalie.Porter@edcgov.us <Natalie.Porter@edcgov.us>

Mr. Efren Sanchez,

Thank you for including the California Department of Transportation (Caltrans) in the Notice of Preparation of a Draft Environmental Impact Report review process for the project referenced above. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

The attached comments are based on the Notice of Preparation of a Draft Environmental Impact Report documents received.

Please provide our office with copies of any further actions regarding this project or future development of the property. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any question regarding these comments or require additional information, please contact me.

Thank you,

Amber Moran

District 3 - Transportation Planner

Regional Liaison - East

703 B Street

Marysville, CA. 95901

530-634-7624

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
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Making Conservation a California Way of Life.

August 26, 2019

GTS# 03-ED-2016-00149
03-ED-50 PM 11.512
SCH# 2019071041

Efren Sanchez, Associate Planner
El Dorado County
2850 Fairlane Court, Building C
Placerville, CA 95667

Dorado Oaks (Stonehenge Springs)

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Hydraulics

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impacts for which adequate mitigation was not undertaken or sustained. In addition, runoff from the proposed project that will enter the State's highway right of way and/or Caltrans drainage facilities must meet all regional water quality control board water quality standards prior to entering the State's highway right of way or Caltrans drainage facilities. Appropriate storm water quality Best Management Practices may be applied to ensure that runoff from the site meets these standards (i.e., is free of oils, greases, metals, sands, sediment, etc.). Once installed, the property owner must properly maintain these systems in perpetuity.

All work proposed and performed within the State's highway right of way must be in accordance with Caltrans' standards and require a Caltrans Encroachment Permit prior to commencing construction. For the encroachment permit application, provide drainage plans and calculations for the pre and post 10 and 100 peak run-off (quantities and velocities) and water quality treatment for all discharge to the State's highway right of way and to Caltrans' highway drainage facilities.

If you have any question regarding these comments or require additional information, please contact Amber Moran, Intergovernmental Review Coordinator for El Dorado County, by phone (530) 634-7624 or via email to Amber.Moran@dot.ca.gov.

Sincerely,

KEVIN YOUNT, Branch Chief
Office of Transportation Planning
Regional Planning Branch—East

Subject: Fwd: Request to extend the Dorado Oaks Comment Period and government to government discussion
Date: Monday, August 26, 2019 at 2:28:21 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller

---------- Forwarded message ---------
From: **Char Tim** <charlene.tim@edcgov.us>
Date: Mon, Aug 26, 2019 at 2:26 PM
Subject: Fwd: Request to extend the Dorado Oaks Comment Period and government to government discussion
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>, Tom Purciel <tom.purciel@edcgov.us>
Cc: Tiffany Schmid <tiffany.schmid@edcgov.us>, Anne Novotny <anne.novotny@edcgov.us>

Please see email below that was sent to the BOS.

Char Tim
Clerk of the Planning Commission

County of El Dorado
Planning and Building Department
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5351 / FAX (530) 642-0508
charlene.tim@edcgov.us

---------- Forwarded message ---------
From: **EDC COB** <edc.cob@edcgov.us>
Date: Mon, Aug 26, 2019 at 1:59 PM
Subject: Fwd: Request to extend the Dorado Oaks Comment Period and government to government discussion
To: Char Tim <charlene.tim@edcgov.us>

FYI

Thank you

Office of the Clerk of the Board
El Dorado County
330 Fair Lane, Placerville, CA 95667
530-621-5390

CONFIDENTIALITY NOTICE: This electronic communication with its contents may contain confidential and/or privileged information. It is solely for the use of the intended recipient(s), except as otherwise permitted. Unauthorized interception, review, use, or disclosure is prohibited and may violate applicable laws including the Electronic Communications Privacy Act. If you are not the intended recipient, or authorized to receive for the intended recipient, please contact the sender and destroy all copies of the communication. Thank you for your

consideration.

---------- Forwarded message ---------
From: **Wopumnes Tribe** <tribalcouncil@eldoradonisenanmewuk.com>
Date: Mon, Aug 26, 2019 at 1:30 PM
Subject: Request to extend the Dorado Oaks Comment Period and government to government discussion
To: The BOSONE <bosone@edcgov.us>, The BOSTWO <bostwo@edcgov.us>, The BOSTHREE <bosthree@edcgov.us>, The BOSFOUR <bosfour@edcgov.us>, The BOSFIVE <bosfive@edcgov.us>, <edc.cob@edcgov.us>
Cc: Fran DeChamp <francescaduchamp@att.net>, Sue Taylor <Sue-Taylor@comcast.net>, Erin Young <elyoung79@gmail.com>, Andrew Mitchell <530racing@gmail.com>, Nisenan Mewuk <tribalcouncil@eldoradonisenanmewuk.com>

District 1 - Supervisor John Hidahl

phone: (530) 621-5650

email:
bosone@edcgov.us

District 2 - Supervisor Shiva Frentzen

phone: (530) 621-5651

email:
bostwo@edcgov.us

District 3 – Brian K. Veerkamp

phone: (530) 621-5652

email:
bosthree@edcgov.us

District 4 - Supervisor Lori Parlin

phone: (530) 621-6513

email:
bosfour@edcgov.us

District 5 - Supervisor Sue Novasel

phone: (530) 621-6577

email:
bosfive@edcgov.us

1. The Wopumnes Tribe is the indigenous of El Dorado County Gold Rush and has, traceable sacred sites throughout the area of the proposed development in Diamond Springs.

2. The Wopumnes Tribe requests a government to government discussion regarding this project.

3. Further the Tribe requests that the public be given the proper opportunity to bring their knowledge to the table in an open comment period since there are significant CEQA impacts to this project area.

We are available through this email address to set up a time.
Thank you,

--
Tribal Council,
Wopumnes Nisenan-Mewuk Tribe of El Dorado County
www.RealMiwokTribe.com
PO Box 1712
Shingle Springs, CA 95682
530-350-5075
--
CONFIDENTIALITY NOTICE: If you've received this email by mistake please let the sender know and delete it.This communication with its contents may contain confidential and/or legally privileged information. It is solely for the use of the intended recipient(s). Unauthorized interception, review, use or disclosure is prohibited and may violate applicable laws including the Electronic Communications Privacy Act.

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

WARNING: This email and any attachments may contain private, confidential, and privileged material for the sole use of the intended recipient. Any unauthorized review, copying, or distribution of this email (or any attachments) by other than the intended recipient is strictly prohibited. If you are not the intended recipient, please contact the sender immediately and permanently delete the original and any copies of this email and any attachments.

Subject: Re: Dorado Oaks EIR
Date: Tuesday, August 27, 2019 at 7:25:17 AM Pacific Daylight Time
From: Gloria Brown
To: Luke Evans, Tom Purciel (tom.purciel@edcgov.us), Michelle Smira Brattmiller
Category: Dorado Oaks

Good morning, Mr. Evans.

Thank you for your prompt response to my concerns about subsurface deposits assocciated with placing the SR-49 intersection where the brick buildings are. I'm pleased to see that you would characterize this area as highly sensitive.

Another one of my concerns is for the fauna and flora that will be affected by the development. You indicated that there is only one species of concern, a manzanita that you couldn't remember the name of. I contacted a friend who is a retired botanist to see if she knew what it would be. She thinks it would be *Arctostaphylos nissenana*, which has a California Rare Plant Rank of 1B.2 (see link below). You indicated that the species on the property was not listed and is only a "species of concern." Could you please clarify which species is on the property, how many specimens were observed, when the botany survey was done, and the botanist who performed the survey?

Thanks again for your help in my assessment of the significance of the possible impacts this project would generate.

Sincerely,
Gloria

Link to Eldorado manzanita:
https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=587

Gloria,
It was good talking with you the other night. I'm also cc'ing Tom Purciel with the County and Michelle Brattmillar with the applicant team to make sure your contact info is in the database for future notices, etc. We are at least several months out from release of the Draft EIR, but if you're in the database, you'll receive notice when it is released.

As for the likelihood of subsurface deposits in the vicinity of the SR-49 intersection site, we would characterize that area as highly sensitive for subsurface cultural resources. Besides the brick building, there is also the cemetery immediately adjacent to the roadway and several other historic structures in the vicinity. The area has clearly been in use for a very long time. Since that aspect of the project would fall under the auspices of Caltrans (work on a State Highway), I would expect that there will be a requirement for a monitoring plan during demolition and excavation. We have yet to fully engage with Caltrans, but I work with them regularly and am familiar with their requirements, and I would expect a rigorous review from them, along with specific requirements for mitigation. Thanks for your interest in the project, and your thoughtful comments.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

-----Original Message-----
From: Gloria Brown [mailto:gloriahb@comcast.net]
Sent: Thursday, August 22, 2019 4:49 AM

To: Luke Evans <LEvans@esassoc.com>
Subject: Dorado Oaks EIR

Hello Mr. Evans,
I'm getting ready to leave town for a couple of days, and I want to make sure to request the EIR for the proposed Dorado Oaks development before I leave. I'm looking forward to reading through it.
I spoke with a co-worker who helped excavate a brewery site in Placerville a few years ago.
He says that they found quite a bit of it in intact buried deposits, even though there were no visible signs on the surface. He expects that if the historic brick buildings are demolished and the road/roundabout are put through there, you should expect to encounter buried deposits in their vicinity, including privies. I hope your team has looked at them from an archaeological perspective as well as an architectural one. Additionally, as I pointed out at the meeting, looking at Diamond Springs as a whole, perhaps as a historic district, the fact that they are the only remaining brick buildings increases their historic significance.
Thank you for sending me the EIR, and thanks for your time listening to my concerns and responding in a thougthful way.
Sincerely,
Gloria Howat Brown

Subject: RE: Dorado Oaks EIR
Date: Tuesday, August 27, 2019 at 11:45:31 AM Pacific Daylight Time
From: Luke Evans
To: gloriahb@comcast.net, Tom Purciel (tom.purciel@edcgov.us), Michelle Smira Brattmiller
CC: Chuck Hughes
Category: Dorado Oaks
Attachments: 17047 Stonehenge Springs BRE.pdf

Gloria,
I'm forwarding along the Biological Resources Evaluation that was prepared for the subdivision site. The site has been surveyed a number of times over the years. The biologist who prepared this latest document is also cc'd here (Chuck Hughes). At the time of the report's preparation he worked for a different firm, but he now works for us. If you have any specific questions concerning bio issues, please ask him and also cc me if you can so that I can remain in the loop. You are correct that the species in question is Nissenan manzanita, and I apologize that my recollection was not precise. It's been about a year since I last read the report. We have yet to formalize mitigation for the species, though the report recommended seedling propagation, which sounds as if it would be the most efficacious technique for this particular species.

There are a number of other bio studies that have been prepared for the project, and all will be available for public review. Note that this particular study was for the subdivision site only, and did not include the SR-49 project area. A separate memo report will be prepared for that area at a later time. Naturally, we're not expecting much in the way of sensitive bio resources up there.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate

ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

From: Gloria Brown <gloriahb@comcast.net>
Sent: Tuesday, August 27, 2019 7:25 AM
To: Luke Evans <LEvans@esassoc.com>; Tom Purciel (tom.purciel@edcgov.us) <tom.purciel@edcgov.us>; Michelle Smira Brattmiller <michelle@mmsstrategies.com>
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Thank you for sending me the EIR, and thanks for your time listening to my concerns and responding in a thougthful way.
Sincerely,
Gloria Howat Brown

Subject: Dorado Oaks comments
Date: Tuesday, August 27, 2019 at 8:14:05 PM Pacific Daylight Time
From: Gloria Brown
To: Tom Purciel (tom.purciel@edcgov.us)
CC: Luke Evans, Michelle Smira Brattmiller
Category: Dorado Oaks
Attachments: Comments on Dorado Oaks Tenative Subdivision Plan.docx

Dear Sir,
I have attached my comments on the proposed Dorado Oaks subdivision. I'm looking forward to your response as the county addresses the issues associated with this project.
Best wishes,
Gloria Howat Brown

Comments on Dorado Oaks Tentative Subdivision Plan

Attention: Tom Purciel, Associate Planner

August 27, 2019

There are many aspects of the Dorado Oaks Subdivision Plan which appear to be well-thought and beneficial, such as the public park and paths. While the integrity of the property proposed for the Dorado Oaks Subdivision Plan has been seriously compromised by previous attempts to develop it, I still have some concerns about impacts this development will have on natural and cultural resources, as well as quality of life. If these concerns can be adequately addressed, the project would address housing needs for possibly a thousand residents, and such "affordable" housing is sorely needed in our area.

The following are my comments on the proposed Dorado Oaks Subdivision Plan.
Natural resources:

1. Loss of natural resources such as oak trees, wetlands, and listed species should be circumvented by planning to avoid these resources as much as possible. Mitigation for loss of resources such as oak trees removed and loss of wetlands should be addressed on site if at all possible.
2. I spoke with Luke Evans, who prepared the EIR, at the informational meeting August 20th. He stated that there were no species that were listed, although there is a manzanita species of concern on the property (he couldn't remember which one at the time). Neither Mr. Evans not the developer's engineer Brian Allen thought that this species would be protected during development of the property. I would like to see the developer make an effort to protect as many of these plants as possible to be incorporated into the landscaping and wild spaces.
3. Likewise, as the name of the development includes the word "oak" I would hope that as many of these trees as possible would be protected during construction. Those that must be removed could be replaced during the landscaping phase, instead of mitigation taking place in an entirely different habitat in a far corner of the state.
4. In addition to these two native taxa, I would like to see an effort to incorporate native plants in the landscaping in this development. Studies have shown that approximately a third of landscaping needs to be native plants to support native fauna such as birds. If local, drought resistant plants are used, local water supplies will also be less impacted.
5. As this plan has gotten this far, I assume that EID has assured the county that their water supplies are adequate for an additional 381 residential units. However, I remember trees dying on the library's lawn in past droughts. Can our water supply sustain this much growth through droughts, which will most likely increase as climate change increases?

Cultural resources:

1. It would be terribly short-sighted to demolish the two brick buildings to construct a roundabout at the intersection of SR 49 and China Garden. Although these buildings have been deemed ineligible for listing as historic properties due to loss of integrity, they are the only brick buildings left in Diamond Springs. Very few historic buildings are left in town. While the buildings may be in poor condition, their presence is an important part of the historic nature of this town. When viewed as part of Diamond Springs as an unofficial

historic district, their significance is obvious. Additionally, if evaluated from an archeological perspective and not just an architectural one, their cultural significance is more apparent. Privies and other buried archaeological deposits are most likely associated with these buildings. Not only are these resources irreplaceable, they are expensive to mitigate. Therefore, I would not consider Alternative A an acceptable option. Instead I recommend Alternative D, perhaps with a two-way left turn lane between Silver Road and China Garden Road. Another alternative is proposed here, sort of a hybrid between Alternatives A and C (see attached sketch). Alternative A+ would connect Faith Lane and China Garden by realigning them through the parking lots of the brick buildings and the fire station property across SR 49 (480 Locust Road) with a signal instead of a roundabout, as signals use less space. This might allow for the preservation of all buildings and the cemetary.

2. Mr. Evans indicated that the only other known cultural resources in the APE are bedrock mortars at the south end of the property. His company was unable to relocate them, and they assume they are obscured by blackberries. He stated that they would not be disturbed by development. Therefore, he concludes that monitoring by a cultural resource specialist is not necessary. While I agree that the north end of the property has already been disturbed by previous developers and intact deposits are unlikely, both historic and prehistoric resources are fairly likely to be encountered in the undisturbed areas to the south. Archaeologists should be required to monitor during ground disturbance on portions of the property that have not been previously graded.
3. There is a grove of Tree of Heaven (*Ailanthus altissima*) to the southeast of the previously graded section. This invasive species was introduced to this area by Chinese miners and may be indicative of a Chinese camp or cemetery. This is an example of historic resources that may be hiding under the vegetation and soils, and another reason that an archaeologist should be present to monitor during ground disturbing activities.

Quality of life impacts:

1. I applaud the plan to include a park. However, I request that no lighting for the soccer or other playing fields be allowed.
2. The inclusion of trails/walking paths will be a benefit to the entire community. In addition, bike paths along all roads should be included. Mr. Evans and Mr. Allen indicated that the county has plans to eventually connect this development to Union Mine High School via Argonaut Drive. By insisting that bike paths are included on all roads constructed in this development now, future high school students will have safer alternatives for biking to and from school. At present, students are riding bikes, scooters, and skateboards on Pleasant Valley Road at great peril. Please ensure that bike paths are part of every road in the APE.
3. Can existing roads really accommodate the increased traffic this project will generate? I request a copy of the traffic report when it is done so that I can attempt to evaluate this information myself. At the very least, no units should be occupied until the Diamond Springs Parkway is operational.
4. Considering larger impacts to our community and beyond, I request that these units be built with fire safety in mind. Please require the use of the most fire safe building materials, require power lines to be under ground, and whatever other measures will help protect life and property from another Paradise. The inclusion of four access roads plus an emergency access road is a good step in the right direction. Residents on Fowler Lane

and Argonaut Drive may object now, but they may need these roads to evacuate in the event of a fire blocking other alternatives.

5. And on an even larger scale, I request that these units be constructed with an eye to the carbon footprint they will leave. Requiring solar panels on the rooftops of the multiplex buildings or any parking lots would be a step in the right direction.

Thank you for doing what you can to help balance the need to protect our resources and quality of life with the need for affordable housing and the rights of developers to do as they see fit within legal parameters.

Sincerely,
Gloria Howat Brown
4235 Lime Kiln Road
Diamond Springs, CA
gloriahb@comcast.net
530-626-3241



Alternative A+ for signaled intersection with SR-49 and China Garden Road.

Subject: Fwd: Dorado Oaks 8/20/19 NOP Scoping Mtg Public Comment from Ken Greenwood 8/26/19
Date: Tuesday, August 27, 2019 at 12:05:47 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira Brattmiller
Category: Dorado Oaks

In the event you did not receive this specific comment/response from this commenter.

---------- Forwarded message ---------
From: **Anne Novotny** <anne.novotny@edcgov.us>
Date: Mon, Aug 26, 2019 at 9:55 PM
Subject: Fwd: Dorado Oaks 8/20/19 NOP Scoping Mtg Public Comment from Ken Greenwood 8/26/19
To: Tom Purciel <tom.purciel@edcgov.us>
Cc: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

---------- Forwarded message ---------
From: **Tiffany Schmid** <tiffany.schmid@edcgov.us>
Date: Mon, Aug 26, 2019 at 10:27 AM
Subject: Fwd: Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"
To: Anne Novotny <anne.novotny@edcgov.us>

---------- Forwarded message ---------
From: **The BOSTHREE** <bosthree@edcgov.us>
Date: Mon, Aug 26, 2019 at 9:13 AM
Subject: Fwd: Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"
To: Tiffany Schmid <tiffany.schmid@edcgov.us>, Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Cc: Brian Veerkamp <brian.veerkamp@edcgov.us>

Kathy Witherow
Assistant to Supervisor Brian K. Veerkamp
District Three - El Dorado County
530.621.5652

---------- Forwarded message ---------
From: **EDC COB** <edc.cob@edcgov.us>
Date: Mon, Aug 26, 2019 at 9:10 AM
Subject: Fwd: Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"
To: The BOSONE <bosone@edcgov.us>, The BOSTWO <bostwo@edcgov.us>, The BOSTHREE <bosthree@edcgov.us>, The BOSFOUR <bosfour@edcgov.us>, The BOSFIVE <bosfive@edcgov.us>

FYI.

Thank you,

Office of the Clerk of the Board
El Dorado County
330 Fair Lane, Placerville, CA 95667
530-621-5390

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---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Mon, Aug 26, 2019 at 1:52 AM
Subject: Dorado Oaks Comment Period Extension due to poor handling of "Public Information/Scoping Meeting"
To: edc cob <edc.cob@edcgov.us>
Cc: Tom Purciel <dorado_oaks@edcgov.us>, Rommel Pabalinas <Rommel.Pabalinas@edcgov.us>

Dear Board of Supervisors,

The Dorado Oaks Subdivision and Rezone application was the subject of a "Public Information/Scoping Meeting" last Tuesday August 20 at the Fireman's Memorial Hall in Diamond Springs. The 'meeting' was incredibly non-informative and an abuse of process according to many who attended and published substantive comments on Social Media. Additionally, I am told that Planning Staff decided to start the meeting at approximately 5:30 because so many people showed up... Really? Who does that for a meeting widely advertised as beginning at 6:00 PM?

For this and other reasons detailed below, I and others request the "Comment Period" for the EIR/NOP Scoping process be extended. It would also behoove the Planning Department to hold another meeting ASAP to facilitate this process. The Public has been dis-served by the current process. It turned into the "Cluster" I warned you about two weeks ago.

I have already been told there will be "plenty of opportunities to comment in the future" on the adequacy of the Environmental Documentation and such. Indeed there will be opportunities to comment on the Draft EIR. the Final EIR and of course the Planning Commission and Board Public Hearings during consideration of the Project itself. The HUGE problem here as those events are 1, 2 or more years from now and that time factor allows a lot to be "etched in stone" from so many perspectives. "Projects" tend to create and attain a life of their own and "Public Comment" at later points in time is purely REACTIONARY to some fairly obvious mistakes in analysis of "Environmental Impacts" that could be avoided by EARLY INVOLVEMENT by the public and agencies that may be driven by their management or Governing Boards based on Public concern from their constituents.

My whole point is that in the Planning Process required by State Law works better with MORE information and public involvement vs less! You have seen "angry mobs with torches and pitchforks" show up for Hearings and you know that most of their concerns "shoulda and coulda" been dealt with MUCH earlier in the Process had they been informed and involved in the project vs response and REACTION at the hearing or elsewhere LATER in the process. That is what the CEQA Process is supposed to do and when done correctly and with honest attempts to foster public involvement, Projects go through the process smoother and some really good ideas can be included BEFORE momentum is attained.

Additionally there is the intent of CEQA to encourage public participation found in and around CEQA Section 21,000-21,006 and Guidelines 15,001-15,006. So far a really good case could be made that Planning Staff is not meeting the intent, and perhaps Statutory Requirements of the cited Sections. Regardless, it appear disingenuous at best and there are several comments in Social Media that the Planning Department was just going through the motions.

I would have to agree and add that they hardly attained the minimal motions. Is there any wonder El Dorado County Land Use Decisions are the subject of so many SUCCESSFUL lawsuits? It's quite clear to me (and obviously the Courts!).

Here is the NOP/Info Meeting as "Advertised" by EDCo Planning:
https://edcgov.us/Government/planning/public%20notices/Documents/2019/20190729_DoradoOaks_NOP.pdf

Some specific issues:

- The Meeting was advertised to be from 6-8 PM. As above and below, people were very confused as there was no PA system to allow anyone to EFFECTIVELY communicate as the room was extremely noisy and there was little or no assistance from either Planning Staff or the Project Applicants to guide people to the various "Break Out Tables" for more specific information.

- The meeting actually was started at approximately 5:30 "because so many had already showed-up" as justification. That is simply unfathomable and a disservice to all in attendance. At 5:55 I arrived and there were 20+ people in line at the sign in table and more coming in.

- The Planning Department did not take my heartfelt and professional advice to video or audio record the meeting, provide a Power Point presentation or paper maps showing the project and adjacent parcelization so people could ask and see "How close am I to the Project." "Where are the access points?" "How many Dwelling Units? (To gauge the traffic impacts and such.) NONE of that was provided in any effective way. The people at the "Land Use" table were unable to answer that question.
    - When I asked that SAME QUESTION in an e-mail August 5, I received a response as follows: **"Your comments on the project regarding the units, staff will accept these comments and will be analyzed as part of the EIR."** Seriously? That is information that should be in the "Project Description" that should have been defined once the Application was considered "Complete" by Planning Staff back in November 2018!

- The "Break Out Tables" had no indication above eye level describing what was going on at that table. The tables each had an 8 1/2 X 11 paper with maybe 40 point type taped to the edge of the table. As it was a "Standing Room Seating" no one could actually see these signs and therefore most had no idea of where to go for information. The "Signs" should have been MUCH BIGGER and attached to the wall above the tables.

- Why was Craig Sandberg (the applicant's Attorney) giving the "Project Overview" (that really wasn't a "Project Overview") and more of a "General Plan Designation and Zoning are in place, the project has been considered previously" and inferred that it is essentially a done deal at this point... Again I can only say, **SERIOUSLY?** Who does that? I was appalled as were a number of people in the room.

Ah!

- There was one bright spot and that was the "CEQA Flowchart" (that I just can't seem to find anywhere else) showing the various CEQA steps AND the "Local Agency" hearings included. As there was no staff at the graphic, so I stood near it and provided clarification as to "We are here in the process at this time." People really appreciated

that they were getting some "hard facts" they said were not being provided elsewhere in the room.

Some comments from Facebook (El Dorado County Chat) after the meeting: (One of the Posts have 450 Comments, several have 100+ and many of them are actually cogent and thoughtful. Some are people who sadly learned little or nothing at the meeting regarding process, which SHOULD have been explained at the beginning of the meeting.)

> "That meeting was not really helpful, and so difficult to even hear anyone. It's too bad a lot of people attended and would have been nice had it been better organized."

> "Yeah it wasn't great. However I do think it was more about fielding complaints and getting back with answers. So responsible just poorly planned especially for a planning committee"

> "Nobody gets to vote on it, and that's part of the problem. They seek public input, *but the impression left at Tuesday's meeting was that it doesn't matter what the public thinks, even if 90% of the residents of the area oppose this development, it's going to happen.* Too much money to be made by the developer and the county in terms of new tax revenues, the public's opinion means nothing."

> "We wrote Comment cards but we heard that no one's going to pay attention to them. So who do we send our email or letter to that we know would count? I was also told that if you signed a petition it counts as one comment. This whole thing was maddening. There was no questions and answers. I never got any answers about my house with the red line going through it."

> There's a Board of Supervisors meeting on Tuesday at nine sharp. I am definitely going to go there because *I went to the meeting at the fire department and I got absolutely no answers no help.* I am very distraught right now. I moved in this house when I was 39 and now I'm 73 and I'm thinking where am I going to go??

These don't sound like people who got the message at the Scoping Meeting... Why? BECAUSE THEY DIDN'T get the message as it was poorly presented, if at all.

As a former Planner who conducted my share of such meetings, it was really hard to watch it so poorly done. I even gave Staff some pre-meeting advice and ideas that would have REALLY made a difference. Sadly it was not to be.

Thank you for consideration of my request to extend the comment period. Somebody needs to do something about the management of this project.

Sincerely,

Ken Greenwood
Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

Subject: Re: Dorado Oaks EIR
Date: Wednesday, August 28, 2019 at 7:53:02 AM Pacific Daylight Time
From: Gloria Brown
To: Tom Purciel (tom.purciel@edcgov.us)
CC: Michelle Smira Brattmiller, Luke Evans, gloriahb@comcast.net
Category: Dorado Oaks

Good morning Mr. Purciel,
I just received information from Mr. Evans about the manzanita species of concern. Unfortunately, I'm leaving for work now and won't have time to read the recommendations before the comment period ends. However, as there are less than 100 reported occurances of this species, mostly in El Dorado County, we need to take its preservation very seriously.
Sincerely,
Gloria Howat Brown
4235 Lime Kiln Road
Diamond Springs, CA
530-626-3241
gloriahb@comcast.net

Gloria,
I´m forwarding along the Biological Resources Evaluation that was prepared for the subdivision site. The site has been surveyed a number of times over the years. The biologist who prepared this latest document is also cc´d here (Chuck Hughes). At the time of the report´s preparation he worked for a different firm, but he now works for us. If you have any specific questions concerning bio issues, please ask him and also cc me if you can so that I can remain in the loop. You are correct that the species in question is Nissenan manzanita, and I apologize that my recollection was not precise. It´s been about a year since I last read the report. We have yet to formalize mitigation for the species, though the report recommended seedling propagation, which sounds as if it would be the most efficacious technique for this particular species.

There are a number of other bio studies that have been prepared for the project, and all will be available for public review. Note that this particular study was for the subdivision site only, and did not include the SR-49 project area. A separate memo report will be prepared for that area at a later time. Naturally, we´re not expecting much in the way of sensitive bio resources up there.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

From: Gloria Brown <gloriahb@comcast.net>
Sent: Tuesday, August 27, 2019 7:25 AM
To: Luke Evans <LEvans@esassoc.com>; Tom Purciel (tom.purciel@edcgov.us)

<tom.purciel@edcgov.us>; Michelle Smira Brattmiller
<michelle@mmsstrategies.com>
Subject: Re: Dorado Oaks EIR

Good morning, Mr. Evans.

Thank you for your prompt response to my concerns about subsurface deposits assocciated with placing the SR-49 intersection where the brick buildings are. I'm pleased to see that you would characterize this area as highly sensitive.

Another one of my concerns is for the fauna and flora that will be affected by the development. You indicated that there is only one species of concern, a manzanita that you couldn't remember the name of. I contacted a friend who is a retired botanist to see if she knew what it would be. She thinks it would be Arctostaphylos nissenana, which has a California Rare Plant Rank of 1B.2 (see link below). You indicated that the species on the property was not listed and is only a "species of concern." Could you please clarify which species is on the property, how many specimens were observed, when the botany survey was done, and the botanist who performed the survey?

Thanks again for your help in my assessment of the significance of the possible impacts this project would generate.

Sincerely,
Gloria

Link to Eldorado manzanita:
https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=587

Gloria,
It was good talking with you the other night. I'm also cc'ing Tom Purciel with the County and Michelle Brattmillar with the applicant team to make sure your contact info is in the database for future notices, etc. We are at least several months out from release of the Draft EIR, but if you're in the database, you'll receive notice when it is released.

As for the likelihood of subsurface deposits in the vicinity of the SR-49 intersection site, we would characterize that area as highly sensitive for subsurface cultural resources. Besides the brick building, there is also the cemetery immediately adjacent to the roadway and several other historic structures in the vicinity. The area has clearly been in use for a very long time. Since that aspect of the project would fall under the auspices of Caltrans (work on a State Highway), I would expect that there will be a requirement for a monitoring plan during demolition and excavation. We have yet to fully engage with Caltrans, but I work with them regularly and am familiar with their requirements, and I would expect a rigorous review from them, along with specific requirements for mitigation. Thanks for your interest in the project, and your thoughtful comments.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates

909.809.0508 mobile
520.789.7301 direct land line

-----Original Message-----
From: Gloria Brown [mailto:gloriahb@comcast.net]
Sent: Thursday, August 22, 2019 4:49 AM
To: Luke Evans <LEvans@esassoc.com >
Subject: Dorado Oaks EIR

Hello Mr. Evans,
I'm getting ready to leave town for a couple of days, and I want to make sure to request the EIR for the proposed Dorado Oaks development before I leave. I'm looking forward to reading through it.
I spoke with a co-worker who helped excavate a brewery site in Placerville a few years ago. He says that they found quite a bit of it in intact buried deposits, even though there were no visible signs on the surface. He expects that if the historic brick buildings are demolished and the road/roundabout are put through there, you should expect to encounter buried deposits in their vicinity, including privies. I hope your team has looked at them from an archaeological perspective as well as an architectural one. Additionally, as I pointed out at the meeting, looking at Diamond Springs as a whole, perhaps as a historic district, the fact that they are the only remaining brick buildings increases their historic significance.
Thank you for sending me the EIR, and thanks for your time listening to my concerns and responding in a thougthful way.
Sincerely,
Gloria Howat Brown

Subject: New housing development
Date: Wednesday, August 28, 2019 at 5:18:53 PM Pacific Daylight Time
From: Nicholas Bowers
To: Michelle Smira
Category: Dorado Oaks
Attachments: image001.jpg

Hi Michelle,

My name is Nick Bowers and I'm writing you this email to explain why I oppose the new proposed housing development that is planned for Diamond Springs. For starters, I have lived on Argonaut Drive for 10 years now and its been my experience that we already have a traffic problem within our community as it is and with the wildfire danger that we have in the foothills it will make it that much harder to escape in an emergency situation with an extra 400-600 families to compete with. Also, I oppose it because I don't want my road to be the main entrance to this new proposed development (again, we already have a traffic problem).

Thank you for taking the time to read this.

Thank you,
Nicholas Bowers
Operations Manager
p. 530.295.8200 | f. 530.295.8222
nicholasb@wsdwheel.com | www.wsdwheel.com

Tires & Wheels – Our Quality, Your Performance

Subject: Dorado Oaks Comment Card
Date: Wednesday, August 28, 2019 at 5:27:21 PM Pacific Daylight Time
From: Bethany Bowers
To: Michelle Smira
CC: planning@edcgov.us, dorado_oaks@edcgov.us
Category: Dorado Oaks

Dear Michelle with MMS Strategies and whomever else it may concern:

CC: Tom Purciel with the El Dorado Planning Department

I have many concerns regarding the proposed Dorado Oak Subdivision that I would like to share with you.

1. I currently own a home on Argonaut Drive in Diamond Springs. It is my understanding that this road will be the main access point into this subdivision. Argonaut is not an appropriate road for that such traffic. To be honest I was very surprised that your company is even considering it an option. Argonaut is a small street that does **not** have room for the amount of two way traffic that your subdivision will come with. It is already a dangerous road for both pets and children. With added traffic it will become incredibly dangerous for anyone to travel via foot or bike. Backing in and out of our steep driveways in another serious concern that I have. As motorists already drive too quickly for this road, I guarantee the added traffic will result in many more vehicle accidents. Argonaut needs to be looked at more closely by your company because I do not understanding how a planning company believes it to be a road that is equipped for the amount of traffic your subdivision will bring.

2. Not only is this project going to greatly impact the traffic flow on Argonaut Drive, it will affect Patterson and Tullis Mine Roads. In the case of a fire, I fear that evacuation will be impossible. We had a fire on Patterson Road a few years back. Patterson was closed to any traffic while the firefighters worked. Due to this, Tullis Mine was the only Road that could be used to get in and out. It was jammed packed. Vehicles were bumper to bumper and we were going an incredibly slow rate of speed. With such a large subdivision going in, even if Patterson remained open, evacuation would be a nightmare.
The safety of this community should come before all else.

3. In addition to Argonaut, Tullis Mine, and Patterson this proposed development will increase the overall congestion of Diamond Springs. It will result in backups on Fowler, Pleasant Valley Road, and Missouri Flat. Our small town is not equipped to handle this congestion.

4.

In reviewing your plans, I noticed that the proposed lot sizes are incredibly small. Lots should be no less than one quarter of an acre. The proposed park is also too small. A park resulting in such a large subdivision should be at least 10 acres in size.

5. In addition to the stress that this development will put on our roads. The development will add approximately 10% to our current population in Diamond Springs. This will put pressure on our water resources, waste disposal, and sewage.

6. Air pollution and the noise level will greatly increase due to this project.

7. It is my understanding that this development does not follow our planning department's Mission Statement. My hope is that our county will read their statement closely before agreeing on such a project.

8. It is no secret that El Dorado County has a difficult time in maintaining our roads. Dorado Oaks will only increase this existing problem.

I would greatly appreciate it if my concerns and the concerns of **many** others are addressed before our county planning department and MMS Strategies proceed any further with this project.
While I agree that more housing in our county is needed, the proposed location is not an appropriate site.

Thank you for your time,
Bethany Bowers
Homeowner,
Argonaut Drive

Subject: Fwd: [dorado_oaks] Concerns about Dorado Oaks Development
Date: Thursday, August 29, 2019 at 8:26:35 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira
Category: Dorado Oaks

---------- Forwarded message ---------
From: **Maureen Perry** <dionperry@att.net>
Date: Wed, Aug 28, 2019 at 6:23 PM
Subject: [dorado_oaks] Concerns about Dorado Oaks Development
To: <dorado_oaks@edcgov.us>

I am very concerned about the density of this development - It is not at all in keeping with the area.

I shop and dine in Diamond Springs and this development looks like it belongs in a suburban/urban area.

I would hope that it would be scaled back considerably with more open space around.

In addition, there should be a provision for 20% "affordable housing" as part of any development here in EDC.

Thank you

Maureen Dion-Perry
Resident of El Dorado County

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] We need homes
Date: Friday, August 30, 2019 at 8:19:24 AM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira

---------- Forwarded message ---------
From: **'Susan Sinetos' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Fri, Aug 30, 2019 at 7:03 AM
Subject: [dorado_oaks] We need homes
To: <dorado_oaks@edcgov.us>

I'm supporting the project as we need homes in our community. We have a housing shortage and it's time to build more homes.

I hope it's a mixture of apartments, single family both large and small so different income levels can afford. Build the infrastructure to accommodate the traffic. Be smart, be productive, and it will work.

Thank you
Susan Sinetos

Sent from my iPhone

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: [dorado_oaks] Dorado Oaks project comment
Date: Thursday, August 29, 2019 at 3:24:34 PM Pacific Daylight Time
From: Tom Purciel
To: Michelle Smira

---------- Forwarded message ---------
From: **'M Ramos' via PL-dorado_oaks-m** <dorado_oaks@edcgov.us>
Date: Thu, Aug 29, 2019 at 3:22 PM
Subject: [dorado_oaks] Dorado Oaks project comment
To: <dorado_oaks@edcgov.us>

Hello,

Here is a copy of a letter that I sent to the Governor.

This is regarding a proposed project adjacent to State Route 49 in Diamond Springs, CA. Here is a link to the "Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) and Notice of
Public Scoping Meeting for the Dorado Oaks Tentative Subdivision Map."
https://edcgov.us/Government/planning/public%20notices/Documents/2019/20190729_DoradoOaks_NOP.pdf?fbclid=IwAR1Enx5CN0ksjRRXc2kje71OKa9QkUYvanv3frG5wE9FiocJEe33QV2moeY
This is a high density residential project along a roadway that has crawling bumper to bumper traffic at certain times of the day during normal conditions. Even before the project was announced, I was afraid of being able to evacuate during a fire or some other disaster. Normal workday traffic backs up into a heavily wooded area where thousands of people will burn to death in their cars. The increased strain on this roadway of this project will be devastating. I'd like to see the State get involved in this because I have heard people say that the developer thinks this is a done deal regardless of the outcome of yet to be done environmental studies and regardless of public input. No one at the Public Scoping Meeting felt that anyone there was listening to them. There was a traffic engineer who seemed to be truly shocked and said that he was not aware that there is a traffic problem through Diamond Springs. Head toward Diamond Springs from the East on Pleasant Valley Rd at about 7:30 am on a weekday. There is bumper to bumper traffic for miles. If there is an accident, you could be stuck for hours. Can you imagine this road during an evacuation scenario? Please check into this before it's pushed though without the proper consideration. Thank you.

I wrote about the traffic problem because 49 is a state road. However, there is a whole lot more wrong with the project than traffic.

Thank you,

Marie Ramos
Mailing address: 705 Pleasant Valley Rd, #55, Diamond Springs, CA 95619

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: FW: Dorado Oaks Subdivision
Date: Thursday, August 29, 2019 at 1:07:15 PM Pacific Daylight Time
From: Nancy Franzi
To: dorado_oaks@edcgov.us, Michelle Smira

From: Guy Franzi [mailto:bomaybe@sbcglobal.net]
Sent: Thursday, August 29, 2019 12:41 PM
To: Nancy Franzi
Subject: Diamond Oaks

The following is a statement from the attorney (Craig Sandberg) for the developers of Dorado Oaks.
"The Dorado Oaks project has been in the works since 2007. Changes to the county's general plan and traffic impact studies have pushed the project back. I stress that the project, while a big change for the Diamond Springs community, is in line with the county's general plan.
This property and the property adjacent to it is designated for development, high-density development, the general plan requires this density."
This statement should be enough to tell you that neither attorney or the developers have any interest in what is good for the folks of Diamond Springs.
Currently mornings through Diamond Springs see almost 1000 cars hour and in the evenings 1500 plus an hour, with this project we will be adding 300 plus homes to our town and their occupants to these numbers. But the general plan says its OK, its required? These folks don't live in Diamond Springs, and certainly aren't going to move here should the project be completed.
Please take into consideration the opinions of the folks of Diamond Springs before those who have only money ties to this community.
Thank You,
Guy Franzi
2001 Great View Lane
Diamond Springs, Ca 95619

530-919-3511

Sent from my iPad

Subject: Fwd: CDFW's comments on the NOP for the Dorado Oaks Project (SCH 2019071041)
Date: Friday, September 13, 2019 at 9:51:46 AM Pacific Daylight Time
From: Michelle Smira <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>

Can you please print and add to the group.

Also, can you make a copy of all the comments? I am bringing them to Trish this weekend for her to start inputting all the comments.

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

Begin forwarded message:

From: Tom Purciel <tom.purciel@edcgov.us>
Date: September 13, 2019 at 8:24:54 AM PDT
To: PL-dorado_oaks-m <dorado_oaks@edcgov.us>, Michelle Smira Brattmiller <michelle@mmsstrategies.com>
Subject: Fwd: CDFW's comments on the NOP for the Dorado Oaks Project (SCH 2019071041)

---------- Forwarded message ---------
From: **Quillman, Gabriele@Wildlife** <Gabriele.Quillman@wildlife.ca.gov>
Date: Thu, Sep 12, 2019 at 5:11 PM
Subject: CDFW's comments on the NOP for the Dorado Oaks Project (SCH 2019071041)
To: tom.purciel@edcgov.us <tom.purciel@edcgov.us>
Cc: Wildlife R2 CEQA <R2CEQA@wildlife.ca.gov>, state.clearinghouse@opr.ca.gov <state.clearinghouse@opr.ca.gov>

Dear Mr. Purciel,

The California Department of Fish and Wildlife (Department) appreciates the opportunity to comment on the Notice of Preparation (NOP) for the Dorado Oaks Project (project)[SCH 2019071041]. The Department is responding to the NOP as a Trustee Agency for fish and wildlife resources (California Fish and Game Code Sections 711.7 and 1802, and the California Environmental Quality Act [CEQA] Guidelines Section 15386), and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines Section 15381), such as the issuance of a Lake or Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*) and/or a California Endangered Species Act (CESA) Permit for Incidental Take of Endangered, Threatened, and/or Candidate species (California Fish and Game Code Sections 2080 and 2080.1).

The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (i.e., biological resources); and administers the Natural Community Conservation Planning Program (NCCP Program). The Department offers the comments and recommendations presented below to assist the El Dorado County Planning Department (County; the CEQA lead agency) in adequately identifying and/or mitigating the project's significant, or potentially significant, impacts on biological resources. The comments and recommendations are also offered to enable the Department to adequately review and comment on the proposed project with respect to impacts on biological resources. The Department recommends that the forthcoming CEQA document address the following:

Assessment of Biological Resources

Knowledge of the regional setting of a project is critical to the assessment of environmental impacts and special emphasis should be placed on environmental resources that are rare or unique to the region. To enable Department staff to adequately review and comment on the project, the CEQA document should include a complete assessment of the flora and fauna within and adjacent to the project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats. The Department recommends that the CEQA document specifically include:

1. An assessment of the various habitat types located within the project footprint, and a map that identifies the location of each habitat type. The Department recommends that floristic, alliance- and/or association based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the project. The Department's California Natural Diversity Database (CNDDB) in Sacramento may be contacted at (916) 322-2493 or bdb@wildlife.ca.gov to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed project. The Department recommends that CNDDB Field Survey Forms be completed and submitted to CNDDB to document survey results. Online forms can be obtained and submitted at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data.

   Please note that the Department's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. The Department recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species

(Fish and Game Code § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the project area and should not be limited to resident species. The CEQA document should include the results of focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service, where necessary. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following the Department's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see https://www.wildlife.ca.gov/Conservation/Plants).

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The CEQA document should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the project. To ensure that project impacts to biological resources are fully analyzed, the following information should be included in the CEQA document:

1. A discussion of potential impacts from lighting, noise, human activity, and wildlife-human interactions created by zoning of development projects or other project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address project-related changes on drainage patterns and water quality within, upstream, and downstream of the project site, including: volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project site.

2. A discussion of potential indirect project impacts on biological resources, including resources in areas adjacent to the project footprint, such as nearby public lands (e.g. National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

The Department encourages project design that avoids and preserves onsite features that

contribute to habitat connectivity. The CEQA document should include a discussion of both direct and indirect impacts to wildlife movement and connectivity, including maintenance of wildlife corridor/movement areas to adjacent undisturbed habitats.

3. A cumulative effects analysis developed as described under CEQA Guidelines § 15130 (if an Environmental Impact Report is required). Please include all potential direct and indirect project related impacts to riparian areas, wetlands, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation Measures for Project Impacts to Biological Resources

The CEQA document should include appropriate and adequate avoidance, minimization, and/or mitigation measures for all direct, indirect, and cumulative impacts that are expected to occur as a result of the construction and long-term operation and maintenance of the project. When proposing measures to avoid, minimize, or mitigate impacts, the Department recommends consideration of the following:

4. *Fully Protected Species*: Several Fully Protected Species (Fish and Game Code § 3511) have the potential to occur within or adjacent to the project area, including, but not limited to: white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*). Fully protected species may not be taken or possessed at any time. Project activities described in the CEQA document should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the project area. The Department also recommends that the CEQA document fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. The Department recommends that the Lead Agency include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species.

5. *Sensitive Plant Communities*: The Department considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The CEQA document should include measures to fully avoid and otherwise protect sensitive plant communities from project-related direct and indirect impacts.

6. *Mitigation*: The Department considers adverse project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the CEQA document should include mitigation measures for adverse project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement should be evaluated and discussed in detail. If onsite mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

The CEQA document should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

7. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in California Sierra foothills ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

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The Department recommends that local onsite propagules from the project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in the near future in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various project components as appropriate.

Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

8. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Migratory non-game native bird species are protected by international treaty under the federal Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et seq.*). In addition, sections 3503, 3503.5, and 3513 of the Fish and Game Code (FGC) also afford protective measures as follows: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by FGC or any regulation made pursuant thereto; Section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders *Falconiformes* or *Strigiformes* (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by FGC or any regulation adopted pursuant thereto; and Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and

regulations adopted by the Secretary of the Interior under provisions of the MBTA.

The Department recommends that the CEQA document include specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: project phasing and timing, monitoring of project-related noise (where applicable), sound walls, and buffers, where appropriate. The CEQA document should also include specific avoidance and minimization measures that will be implemented should a nest be located within the project site. The Department recommends that pre-construction nesting bird surveys be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner.

9. *Moving out of Harm's Way:* The proposed project is anticipated to result in the clearing of natural habitats that support native species. To avoid direct mortality, a qualified biologist may be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise be injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., the Department does not recommend relocation to other areas). Please note that the temporary relocation of onsite wildlife does not constitute effective mitigation for project impacts associated with habitat loss. The Department generally does not support the use of relocation, salvage, and/or transplantation as the sole form of mitigation for impacts to rare, threatened, or endangered species as these efforts are often experimental in nature and largely unsuccessful.

California Endangered Species Act

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to the California Endangered Species Act (CESA). The Department recommends that a CESA Incidental Take Permit (ITP) be obtained if the project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the project. CESA ITPs are issued to conserve, protect, enhance, and restore State-listed CESA species and their habitats. The Department encourages early consultation, as significant modification to the proposed project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP.

Lake and Streambed Alteration Program

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Fish and Game Code section 1602 requires an entity to notify the Department prior to commencing any activity that may do one or more of the following: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or Deposit debris, waste or other materials that could pass into any river, stream or lake. Please note that "any river, stream or

lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year round). This includes ephemeral and seasonal streams. It may also apply to work undertaken within the flood plain of a body of water.

Upon receipt of a complete notification, the Department determines if the proposed project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake or Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify the project that would eliminate or reduce harmful impacts to fish and wildlife resources.

The Department's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if necessary, the CEQA document should fully identify the potential impacts to the lake, stream, and/or riparian vegetation, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. The Department recommends that the CEQA document include a delineation of onsite lakes and streams, associated riparian and/or wetland vegetation communities, and areas of impact. Early consultation with the Department is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Lake or Streambed Alteration notification package, please go to https://www.wildlife.ca.gov/Conservation/LSA/Forms.

Further Coordination

The Department appreciates the opportunity to comment on the NOP for the Dorado Oaks Project (SCH 2019071041) and recommends that the County address the Department's comments and concerns in the forthcoming CEQA document. The Department is available to meet with the County early in the planning process, and attend a site visit for this project.

If you have any questions regarding this letter or wish to schedule a meeting and/or site visit, please contact me at (916) 358-2955 or at gabriele.quillman @wildlife.ca.gov.

Sincerely,

Gabriele (Gabe) Quillman

California Department of Fish and Wildlife – North Central Region

1701 Nimbus Road, Suite A

Rancho Cordova, CA 95816

(916) 358-2955

--
Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Subject: Fwd: Dorado Oaks EIR
Date: Friday, September 13, 2019 at 9:52:38 AM Pacific Daylight Time
From: Michelle Smira <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>
Attachments: Additional Comments on Dorado Oaks Tentative Subdivision Plan.docx, ATT00001.htm

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

Begin forwarded message:

From: "Gloria Brown" <gloriahb@comcast.net>
Date: September 12, 2019 at 9:06:05 AM PDT
To: Michelle Smira Brattmiller <michelle@mmsstrategies.com>, Luke Evans <LEvans@esassoc.com>, "gloriahb@comcast.net" <gloriahb@comcast.net>, "Tom Purciel (tom.purciel@edcgov.us)" <tom.purciel@edcgov.us>
Subject: Re: Dorado Oaks EIR
Reply-To: gloriahb@comcast.net

Good morning all,

Thank you so much for extending the comment period on the Dorado Oaks development plan. I have attached additional comments on the plan.
Sincerely,
Gloria

Good Morning Gloria,

We have extended the public comment period until September 12. Hopefully that gives you a bit more time to provide comments on the project.

Thank you,
Michelle

Michelle Smira
President | MMS STRATEGIES
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

On 8/28/19, 7:53 AM, "Gloria Brown" <gloriahb@comcast.net> wrote:

Good morning Mr. Purciel,
I just received information from Mr. Evans about the manzanita species of concern.
Unfortunately, I'm leaving for work now and won't have time to read the recommendations
before the comment period ends. However, as there are less than 100 reported occurances
of this species, mostly in El Dorado County, we need to take its preservation very seriously.
Sincerely,
Gloria Howat Brown
4235 Lime Kiln Road
Diamond Springs, CA
530-626-3241
gloriahb@comcast.net

Gloria,
I´m forwarding along the Biological Resources Evaluation that was prepared for the subdivision site. The site has been surveyed a number of times over the years. The biologist who prepared this latest document is also cc´d here (Chuck Hughes). At the time of the report´s preparation he worked for a different firm, but he now works for us. If you have any specific questions concerning bio issues, please ask him and also cc me if you can so that I can remain in the loop. You are correct that the species in question is Nissenan manzanita, and I apologize that my recollection was not precise. It´s been about a year since I last read the report. We have yet to formalize mitigation for the species, though the report recommended seedling propagation, which sounds as if it would be the most efficacious technique for this particular species.

There are a number of other bio studies that have been prepared for the project, and all will be available for public review. Note that this particular study was for the subdivision site only, and did not include the SR-49 project area. A separate memo report will be prepared for that area at a later time. Naturally, we´re not expecting much in the way of sensitive bio resources up there.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

From: Gloria Brown <gloriahb@comcast.net>
Sent: Tuesday, August 27, 2019 7:25 AM
To: Luke Evans <LEvans@esassoc.com>; Tom Purciel (tom.purciel@edcgov.us) <tom.purciel@edcgov.us>; Michelle Smira Brattmiller <michelle@mmsstrategies.com>
Subject: Re: Dorado Oaks EIR

Good morning, Mr. Evans.

Thank you for your prompt response to my concerns about subsurface deposits assocciated with placing the SR-49 intersection where the brick buildings are. I'm pleased to see that you would characterize this area as highly sensitive.

Another one of my concerns is for the fauna and flora that will be affected by the development. You indicated that there is only one species of concern, a manzanita that you couldn't remember the name of. I contacted a friend who is a retired botanist to see if she knew what it would be. She thinks it would be Arctostaphylos nissenana, which has a California Rare Plant Rank of 1B.2 (see link below). You indicated that the species on the property was not listed and is only a "species of concern." Could you please clarify which species is on the property, how many specimens were observed, when the botany survey was done, and the botanist who performed the survey?

Thanks again for your help in my assessment of the significance of the possible impacts this project would generate.

Sincerely,
Gloria

Link to Eldorado manzanita:
https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=587

Gloria,
It was good talking with you the other night. I'm also cc'ing Tom Purciel with the County and Michelle Brattmillar with the applicant team to make sure your contact info is in the database for future notices, etc. We are at least several months out from release of the Draft EIR, but if you're in the database, you'll receive notice when it is released.

As for the likelihood of subsurface deposits in the vicinity of the SR-49 intersection site, we would characterize that area as highly sensitive for subsurface cultural resources. Besides the brick building, there is also the cemetery immediately adjacent to the roadway and several other historic structures in the vicinity. The area has clearly been in use for a very long time. Since that aspect of the project would fall under the auspices of Caltrans (work on a State Highway), I would expect that there will be a requirement for a monitoring plan

during
demolition and excavation. We have yet to fully engage with Caltrans, but I work with them
regularly and am familiar with their requirements, and I would expect a rigorous review from
them, along with specific requirements for mitigation. Thanks for your interest in the project,
and your thoughtful comments.

Note the revised phone numbers below

Luke Evans
Senior Managing Associate
ESA | Environmental Science Associates
909.809.0508 mobile
520.789.7301 direct land line

-----Original Message-----
From: Gloria Brown [mailto:gloriahb@comcast.net]
Sent: Thursday, August 22, 2019 4:49 AM
To: Luke Evans <LEvans@esassoc.com >
Subject: Dorado Oaks EIR

Hello Mr. Evans,
I'm getting ready to leave town for a couple of days, and I want to make sure to request the
EIR for the proposed Dorado Oaks development before I leave. I'm looking forward to
reading through it.
I spoke with a co-worker who helped excavate a brewery site in Placerville a few years ago.
He says that they found quite a bit of it in intact buried deposits, even though there were no
visible signs on the surface. He expects that if the historic brick buildings are demolished and
the road/roundabout are put through there, you should expect to encounter buried deposits in
their vicinity, including privies. I hope your team has looked at them from an archaeological
perspective as well as an architectural one. Additionally, as I pointed out at the meeting,
looking at Diamond Springs as a whole, perhaps as a historic district, the fact that they are
the only remaining brick buildings increases their historic significance.
Thank you for sending me the EIR, and thanks for your time listening to my concerns and
responding in a thougthful way.
Sincerely,
Gloria Howat Brown

Additional Comments on Dorado Oaks Tentative Subdivision Plan

Attention: Tom Purciel, Associate Planner

September 10, 2019

After reading the "Biological Resources Evaluation and Botanical Survey for the Stonehenge Springs Project El Dorado County, CA" (Hughes 2018) and further consideration, I submit the following comments on the Dorado Oaks Subdivision Plan, in addition to those I submitted on August 27, 2019 and in subsequent emails. The two main concerns expressed here concern the presence of a plant with a Rare Plant Rank of 1B.2 (*Arctostaphylos nissenana*) and possible historic resources within the APE.

1. *Arctostaphylos nissenana* (Nissenan manzanita) has approximately 15 known occurrences, all in the foothills of the Sierra Nevada Range in California, earning it a Rare Plant Rank of 1B.2 (Hughes 2018). This development is planned for one of these locations. Comparing the map of housing units to the Nissenan Manzanita (*Arctostaphylos nissenana*) Shrub Location Map (Hughes 2018), none of the 88 plants located in Hughes' 2017 survey will survive the construction of this development as planned. Hughes' recommendation is to propagate these plants from seed to mitigate their loss. I have several concerns with this option.
    a. Has propagation of this plant been done successfully in the past? Has it been unsuccessfully attempted? This information will help evaluate the likelihood of the success of this mitigation plan.
    b. A recent visit to the site found no berries on the *A. nissenana* plants, even though the other manzanita on site, *A. viscida* ssp. *viscida*, had berries present on many plants. The first step in evaluating this mitigation proposal is to find out if seeds can be collected. This work should begin next spring/summer, as soon as the berries start to ripen.
    c. If berries can be collected, propagation should begin immediately to ensure that they respond to cultivation.
    d. This plant grows on very rocky, acidic soils. According to Hughes (2018), "*A. nissenana* at this site appears to prefer the areas that were graded down to near bedrock. Areas with deeper soil, or natural slopes, have few A. nissenana plants." This makes it appear likely that even if new plants are propagated from seed, they will not thrive in other areas on the property. If there are only 15 known occurrences of this plant, and one is eliminated, the likelihood of the species' survival decreases dramatically.
    e. This begs the question of where will mitigation occur? If mitigation occurs at one of the other locations where this plant has been documented, and a fire wipes out the plants in this location, the likelihood for the species' survival plummets.
    f. It will only take a few developments and wildfires wiping out occurrences of this plant to doom it to extinction. Therefore, I recommend preservation of at least one of the two large populations of this plant on this property. As the more northern population has been more recently disturbed (see 2.a. below), and the developer is

planning on the densest housing in this area, the more southern population would be a better fit to preserve.

2. Not yet having access to the EIR, it is hard for me to evaluate if cultural resources have been evaluated with due diligence. At the informational meeting, Mr. Evans stated that there were bedrock mortars on the site that they were unable to relocate. No other cultural resources were mentioned. However, even though I have not seen artifacts on the surface of the property, there are several indications that cultural resources are present and need to be at least thoroughly recorded, if not protected.
    a. The part of the parcel with the most Nissenan manzanita on it has been disturbed, which as mentioned above, seems to make it more attractive to the plant. However, I suspect that the disturbance at the more southern population predates the more recent attempts to develop the property. Although I have seen nothing quite like it before, it looks as if a market farmer were growing rows of rocks (see Google Maps image below). Judging from the ubiquitous presence of lichen and moss on these rows of rocks, they might have been a systematic attempt to "placer" mine. There are also piles of rocks among the rows. Sometimes piles of rocks indicate historic burials, although these piles appear too small to indicate human burials. Still, monitoring needs to be diligent in this area.
    b. Have ditches and historic roads on the property been recorded? While they might not be of sufficient importance to restrict development, they should be thoroughly recorded, using a metal detector to help find artifacts covered with duff, before plans to develop proceed.
    c. The plant list for the property (Hughes 2018) mentions two introduced plant species that can be indicators of historic sites. *Ailanthus altissima* (Tree of heaven) was introduced by Chinese miners. Special care should be taken near this noxious plant due to the possibility of a Chinese camp or cemetery in the proximity. Similarly, *Vinca major* (Greater periwinkle) was planted by homesteaders and could be an indicator of a historic building and associated artifacts in the vicinity, even if none are visible on the surface. Areas with these plants need to be surveyed carefully and monitored by an archeologist during construction.

Thank you for your patient consideration of my comments.

Sincerely,

Gloria Howat Brown
4235 Lime Kiln Road
Diamond Springs, CA
gloriahb@comcast.net
530-626-3241



Map of anthropogenic landform, possibly dating to the gold mining era.

Subject: Fwd: [dorado_oaks] Dorado Oaks NOP Comments
Date: Friday, September 13, 2019 at 9:52:44 AM Pacific Daylight Time
From: Michelle Smira <michelle@mmsstrategies.com>
To: Wesley Fagundes <Wesley@mmsstrategies.com>

Sincerely,

Michelle Smira
President, MMS Strategies
520 Capitol Mall, Suite 280
Sacramento, CA 95814
916.479.3687 C

Begin forwarded message:

From: Tom Purciel <tom.purciel@edcgov.us>
Date: September 12, 2019 at 8:21:22 AM PDT
To: Michelle Smira Brattmiller <michelle@mmsstrategies.com>
Subject: Fwd: [dorado_oaks] Dorado Oaks NOP Comments

---------- Forwarded message ---------
From: **Ken Greenwood** <krg@d-web.com>
Date: Thu, Sep 12, 2019 at 2:15 AM
Subject: [dorado_oaks] Dorado Oaks NOP Comments
To: Tom Purciel <dorado_oaks@edcgov.us>
Cc: Rommel Pabalinas <Rommel.Pabalinas@edcgov.us>, edc cob <edc.cob@edcgov.us>, Planning EDCo <planning@edcgov.us>

Dear EDCo Planning,

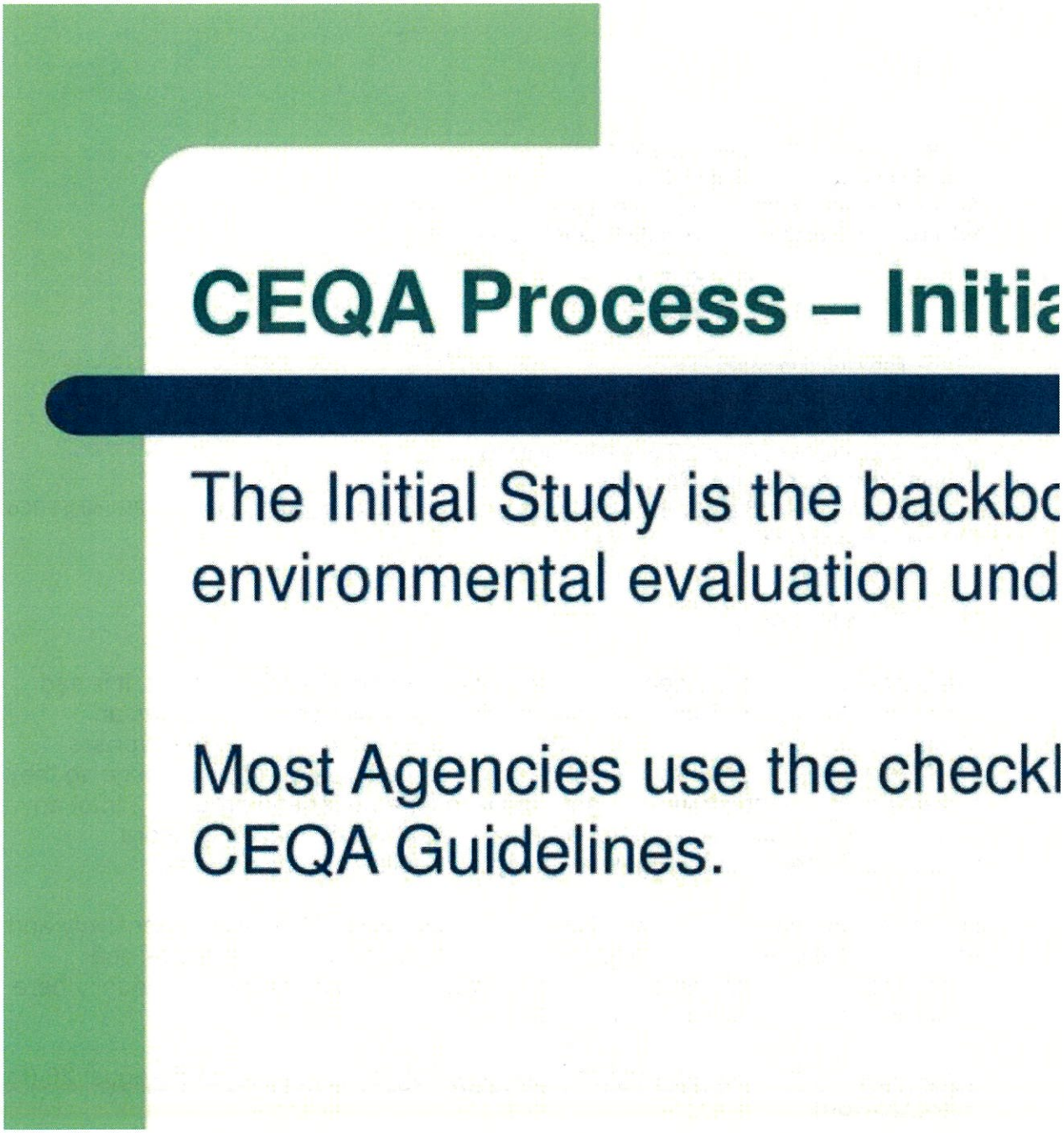
I was pleased to see the comment period was extended for this project. It is sad the August 20, 2019 "Public Information Meeting" was derailed as it was an awesome opportunity (LOST) to educate the concerned public to the Process involved, where they fit into it and how they can participate with knowledge so they can make intelligent comments that will make for a better end product. I trust any further "Workshops" will be better organized and the information be more 'digestible' for the public. Right now, they have a little gastric distress.

I hope that the names and e-mail addresses collected will be used extensively and effectively to disperse any further updates to the Project, any deadlines and upcoming public meetings or workshops. You have an awesome opportunity here to make good and regain the trust of the public.

My previous e-mails dated August 2 (to you), August 19 (to you) and August 26 (to BOS, CC you)

As there is no "Initial Study" to work from, it makes it hard to make good comments on the project as there is nothing but an incoherent "Project Description" that STILL fails to give the average person a firm range of the number of dwelling units the Project may involve. It appears you are trying to be evasive at best, and just plain misleading at worst. Again, this is no way to treat the Public. Please see the "Initial Study" slide from a Power Point presentation linked below:

The form can found at: http://resources.ca.gov/ceqa/guidelines/Appendix_G.html and can be very useful. See what they say in the following Power Point Presentation: "The I.S. is the BACKBONE of the Environmental evaluation under CEQA."
https://www.slideserve.com/oral/ceqa-and-ceqa-plus-powerpoint-ppt-presentation



20

These comments will be brief as you have suggested they are due at 5 PM Thursday September 12, 2019 (instead of Midnight). I seriously doubt you will be staying late to be looking at or logging-in the comments. Just another barrier for people to submit comments.

****

Project Description:

- What is the RANGE of the proposed and allowable "DWELLING UNIT" count of this project? I have requested this more than once and still have no idea what that range might be. Without the RANGE of DU's for the purposes of establishing traffic impacts, there can be no specific numbers attain via analysis. This also applies to many of the OTHER impact analyses (schools, parks, etc) and is just plain courtesy to the Public and Reviewing Agencies.
- I am still amazed that this relatively simple calculation (for you and/or the applicant) hasn't been done. You have failed to adequately describe the Project from the ground up.
    - And PLEASE do not suggest I or anyone else calculate these numbers that seem the complexity of Linear Algebra in 2 variables.
- What is the PHASING of the Project? It clearly will not come on-line all at once, so what time frame can we expect for the implementation of this project?

- These are things that are part of a COMPLETE Project Description.

Noticing:

- It appears the Project has suffered from a lack of "Notice" in general. Has every parcel fronting on the alternative General Circulation accesses to Argonaut and Fowler been noticed? (All the way to Pleasant Valley Drive?) Same for South end " Emergency Access" along lower Fowler?
- I do not see a "noticing exhibit" in any of the documentation. Why was this NOT included in the NOP info? (Or at least referenced in the file/NOP?)

Transportation/Traffic:

- How will this Project impact Peak hour traffic at the US 50 and Missouri Flat intersection?
    - Along Pleasant Valley Road, how will it effect all intersections from the Project site east and west, including Patterson drive and Fowler Drive.

    - How will intersection impacts compare to the Requirements of Measure E?
- Why isn't there an East to West connector from Union Mine High School

through Deer Park to Fowler Drive to alleviate some of the High School traffic on Pleasant Valley Road? The current connection with Argonaut does little to mitigate traffic impacts on Pleasant Valley Road.

Emergency Access:

- The proposed Emergency Access at the south end of the Project area onto "Lower Fowler" road will be problematic for a number of reasons:
  - The Road is not nearly 18 foot wide 2-way Traveled Way. There will need to be extensive widening and involve relocation of fencing and stream side grading.
  - Do the Project applicants have deeded access to use the road for this purpose?
  - Have ALL parcels along this proposed route been NOTICED of this component of the Project Proposal? (In the past? Will they be Noticed in the near future? Will they ever be noticed?) I sure hope they are Noticed in the next 2 months so that their input can be in the mix.

Water Quality:

- Due to a significant increase in on-site impervious surfaces, there will be significant increase of runoff from the project area and the increased runoff will require significant upgrades to downstream drainage facilities, particularly to the Southeast along Fowler Road. How will this be accomplished without increased stream bank erosion and damage to the aquatic environment.
  - Same considerations for all streams flowing off-site.

Wetlands/Wildlife Habitat:

- There are some low-grade wetland areas on the northern portion of the property, but more viable riparian areas towards the south. How will these areas be protected from the effects of increased runoff and all the other impacts of watershed conversion to Residential use?

Archaeological Resources:

- There are 2 identified grinding rock areas on the site. However, there is no discussion of habitation or ceremonial or burial sites on the property. It has been suggested that such sites/uses are on the Project area. Please conduct another survey, but do include the local Native American community beyond those at the Rancheria for consultation.
- The Historical influences are pretty strong on the property with numerous areas of mining activity. How will these be preserved and/or be relocated to the included Parks for interpretive purposes?

Public Services:

- How will this Project be serviced by the El Dorado Sheriff's Office? I recall years ago the EDSO used to send comments saying the usual "Residential Project" will generate the need for X number of Deputies per 1000 population at a "cost per Deputy" (and their car, gun and such). Can't remember what

the $$$/Dwelling Unit was (oh wait, we have no idea of how many DU's there are...), but this is a cost that SHOULD NOT be borne by the General Fund for new development such as this. >Therefore, there is a real suggestion and a NEED for an "Sheriff's Impact Fee per DU" that should be assessed and that fee should be established and then charged for every Dwelling Unit at the Ministerial Building Permit Stage just as most other "Impact Fees" are paid.

- I'll try to find my file on that one as it was all listed-out pretty completely. When I asked the Sheriff at the time (Neves I believe) he said "it wouldn't be taken well." I'm thinking it's time to seriously consider such a fee to adequately serve this and other new development in El Dorado County.

Thanks for your attention to these comments and those previously from my August 2, 19 and 26 e-mails.

Sincerely,

Ken Greenwood

Straight Shot Consulting
530-306-6390 (C) krg@d-web.com

--

Tom Purciel
Associate Planner

County of El Dorado
Department of Planning and Building
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5903
tom.purciel@edcgov.us
https://www.edcgov.us/government/Planning

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Appendix B
Air Quality & Greenhouse Gas Emissions

ESA

Project: Dorado Oaks

Summary of CO_2 Emissions from Project Construction

MT of CO_2 from CalEEMod/RCEM outputs	
2022	Site Prep
On-site equipment	139
Hauling	13
Vendor	2
Worker	2
2022	Grading
On-site equipment	409.0002
Hauling	64.6239
Vendor	4.2669
Worker	11.1656
2022	Building Construction
On-site equipment	53.2968
Hauling	0
Vendor	23.6685
Worker	33.083
2023	Building Construction
On-site equipment	301.3462
Hauling	0.00
Vendor	130.90
Worker	180.06
2024	Building Construction
On-site equipment	303.7223
Hauling	0
Vendor	131.2645
Worker	174.5015
2025	Building Construction
On-site equipment	302.6549
Hauling	0
Vendor	130.1674
Worker	166.9912
2026	Building Construction
On-site equipment	11.596
Hauling	0
Vendor	4.9668
Worker	6.1645
2026	Paving
On-site equipment	62.7486
Hauling	90.0245
Vendor	3.0043
Worker	3.4904
2026	Architectural
On-site equipment	7.9151

Hauling	0
Vendor	0
Worker	7.6789
2022	Proposed Emergency Vehicle Access[1]
Construction	52.24
2022	SR 49 Intersection[1]
Construction	187.3
Demolition	37.3893
Hauling	2.2808
Vendor	0
Worker	1.0837

	MT of CO2e
Total Diesel use	2467.8
Total Gasoline Use	586.5
Onsite diesel	1868.0
Onroad diesel	599.8

Project: Dorado Oaks

Diesel and Gasoline Use Calculations

Diesel Sources - Construction			
Diesel Offroad	1868.013	MT of CO2	
Convert to kilograms	1.87E+06	kg of CO_2	
CO_2 from diesel fuel combustion[a]	10.21	kg of CO_2/gallon of diesel	
Diesel Use over construction period =	182959	gallons of diesel	45740
Diesel Onroad	599.8	MT of CO_2	
Convert to kilograms	6.00E+05	kg of CO_2	
CO_2 from diesel fuel combustion[a]	10.21	kg of CO_2/gallon of diesel	
Diesel Use over construction period =	58746	gallons of diesel	14687

Gasoline Sources - Construction			
Construction workers	586.5	MT of CO_2	
Convert to kilograms	5.86E+05	kg of CO_2	
CO_2 from gasoline fuel combustion[a]	8.78	kg of CO_2/gallon of gasoline	
Gasoline Use over construction period =	66794	gallons of gasoline	16699

Notes:

[a] Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels)

Conversion	1 MT =	1000 kg

Operational Transportation Use

Based on EMFAC2017 data for El Dorado County for 2027, for aggregated model years and speed and all vehicle

Fuel	VMT (miles/day)	Fuel Use (gallons/day)	miles/gallon
DSL	304999.0505	22843.89344	13.35144779
GAS	4528208.042	156292.4118	28.97266726
Fuel	**VMT (miles/day)**	**Fuel Use (gallons/day)**	**Fuel Use (kWh/100miles)**
ELEC	131032.4958	0	26
NG	91.78611068	24.30597381	3.776277857

categories

Project VMT (miles/year)	Project Fuel Use (gallons/year)
438926.643	32875
7310844.682	252336
Project VMT (miles/year)	**Project Electricity Use (kWh/year)**
220179.5649	57247
107.0941314	28

7970065.955 (annual Project VMT from CalEEMod)

Project: Dorado Oaks

Energy for Water Use during Operation

Outdoor Water Use from CalEEMod output	97.54559	Mgal/year
Indoor Water Use from CalEEMod output	19.91105	Mgal/year
Total	117.45664	Mgal/year

From CalEEMod Users Guide, for El Dorado county,

Electricity Intensity Factor to supply water	2117	kWhr/Mgal
Electricity Intensity Factor to treat water	111	kWhr/Mgal
Electricity Intensity Factor to distribute water	1272	kWhr/Mgal
Total Electricity Intensity Factor for Water	3500	kWhr/Mgal

Total annual energy use for water	**411098.24**	**kWhr/year**

Project: Dorado Oaks

Summary of Construction Energy Use - Project

Fuel	Source	Amount	Unit
Diesel	Construction - Offroad	182959	Gallons of diesel
	Construction - Onroad	58746	Gallons of diesel
	Construction - Total	241705	Gallons of diesel
Gasoline	Construction - Onroad	66794	Gallons of gasoline

Summary of Total Annual Operational Energy Use - Project

Fuel	Source	Amount	Unit
Electricity	Buildings	3,620	megaWatt-hour/Year
Natural Gas	Buildings	0	MMBtu/Year
Gasoline	Motor Vehicles	252,336	Gallons of gasoline per
Diesel	Motor Vehicles	32,875	Gallons of diesel per year
Electricity	Motor Vehicles	57	megaWatt-hour/Year
Electricity	Water Use	411	megaWatt-hour/Year

Construction

Gasoline		Gallons/year	Project % of
	California	15400000000	0.000
	El Dorado County	76000000	0.022
	Project	16,699	
Diesel		Gallons/year	Project % of
	California	3100000000	0.002
	El Dorado County	18750000	0.322
	Project	60,426	

Operation

Electricity		kWh/yr	Project % of
	California	2.85E+11	0.001
	El Dorado County	1.22E+09	0.336
	Project	4.09E+06	
Gasoline		Gallons/year	Project % of
	California	15400000000	0.002
	El Dorado County	76000000	0.332
	Project	252,336	
Diesel		Gallons/year	Project % of
	California	3100000000	0.001
	El Dorado County	18750000	0.175
	Project	32,875	

Annual Use over 4 years
60426
16699

Conversion of natural gas intensity to Electical intensity demand

To account for no natural gas service in the project area

CalEEMod Energy use default values

	T24 Electricity (Kwh/size/yr)	Non- T24 Electricity (Kwh/size/yr)	Lighting
Apartments Low Rise	775.93	3,172.76	810.36
Single Family Housing	912.41	6155.97	1608.84

Conversion Factor = 1

Adjsuted values to account for no natural gas

	T24 Electricity (Kwh/size/yr)	Non- T24 Electricity (Kwh/size/yr)	Lighting
Apartments Low Rise	3472.466	3641.400	810.36
Single Family Housing	3994.913	6624.610	1608.84

2019 Title 24 Adjustment

California Energy Commission, Impact Analysis, 2019 Update to the California Energy Efficiency Standards for Residential), Table 19 (Multi-Family without PV), June 10, 2015. Available: https://ww2.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_I

Non-Residential

% savings over Title 24 (2019)

	% savings c Electricity
Non-Residential:	10.7%

Residential

% savings over Title 24 (2019)

	% savings c Electricity
Multi-Family without PV:	2%

	T24 Electricity (Kwh/size/yr)
Apartments High Rise	3403.016
Day-Care Center	3567.457

T24 nat gas energy intensity (kBTU/size/yr)	Non -T24 nat gas energy intensity (kBTU/size/yr)
9,200.58	1,599
10517.5	1599

kBtu = 3.412 kWhr

T24 nat gas energy intensity (kBTU/size/yr)	Non -T24 nat gas energy intensity (kBTU/size/yr)	
		14,659,655.76
0.00	0	10,229,182.02
0	0	

Residential and Non-Residential Buildings, Section 1.2 (Non-

Report_2018-06-29.pdf. Accessed January 2020.

over Title 24 (2016)

Lighting	NG
0%	1%

over Title 24 (2016)

Lighting	NG
0%	5%

11727724.6	11727724.61
8183345.62	8183345.616

Dorado Oaks Subdivision

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acrea
City Park	68.70	Acre	68.70
Apartments Low Rise	225.00	Dwelling Unit	18.17
Single Family Housing	157.00	Dwelling Unit	30.02

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	7
Climate Zone	1			**Operational Year**	2
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted based on http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_

Land Use - From Project Description

Construction Phase - Applicant data. Demolition area associated with SR-49 improvement component

Off-road Equipment - Default used

Off-road Equipment - Default used

Off-road Equipment - Default equipment used

Off-road Equipment - Data from applicant

Off-road Equipment - Data from applicant

Off-road Equipment - Data from applicant

Trips and VMT - Building construction and architectural coating trips based on residential component only, default f data

Demolition -

Grading - Site area

Vehicle Trips - Adjusted based on project traffic study

Woodstoves - Default number of fireplaces assumed, all burning propane per applicant

Energy Use - Adjusted for 2019 Title 24 energy consumption rates and to account electricity replacing natural gas

Construction Off-road Equipment Mitigation -

Water And Wastewater - 20% reduction in indorr water use to account for CalGreen code requirement.

Table Name	Column Name	Default Value	Ne
tblConstructionPhase	NumDays	200.00	
tblConstructionPhase	NumDays	120.00	
tblConstructionPhase	NumDays	310.00	
tblConstructionPhase	NumDays	3,100.00	8
tblConstructionPhase	NumDays	220.00	
tblConstructionPhase	NumDays	220.00	
tblEnergyUse	NT24E	3,172.76	3,
tblEnergyUse	NT24E	6,155.97	6,
tblEnergyUse	NT24NG	1,599.00	
tblEnergyUse	NT24NG	1,599.00	
tblEnergyUse	T24E	775.93	3,
tblEnergyUse	T24E	912.41	3,
tblEnergyUse	T24NG	9,200.58	
tblEnergyUse	T24NG	10,517.50	
tblFireplaces	NumberGas	123.75	
tblFireplaces	NumberGas	86.35	
tblFireplaces	NumberPropane	0.00	2
tblFireplaces	NumberPropane	0.00	1
tblFireplaces	NumberWood	78.75	
tblFireplaces	NumberWood	54.95	
tblGrading	AcresOfGrading	318.75	1
tblGrading	AcresOfGrading	102.00	
tblGrading	MaterialImported	0.00	7,
tblLandUse	LotAcreage	14.06	
tblLandUse	LotAcreage	50.97	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	

tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblProjectCharacteristics	CO2IntensityFactor	641.35	
tblTripsAndVMT	HaulingTripNumber	0.00	3
tblTripsAndVMT	HaulingTripNumber	988.00	1,
tblTripsAndVMT	HaulingTripNumber	0.00	2,
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	VendorTripNumber	531.00	
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	WorkerTripNumber	30.00	
tblTripsAndVMT	WorkerTripNumber	68.00	
tblTripsAndVMT	WorkerTripNumber	1,475.00	2
tblTripsAndVMT	WorkerTripNumber	38.00	
tblTripsAndVMT	WorkerTripNumber	295.00	
tblVehicleTrips	ST_TR	7.16	
tblVehicleTrips	ST_TR	22.75	
tblVehicleTrips	ST_TR	9.91	
tblVehicleTrips	SU_TR	6.07	
tblVehicleTrips	SU_TR	16.74	
tblVehicleTrips	SU_TR	8.62	
tblVehicleTrips	WD_TR	6.59	
tblVehicleTrips	WD_TR	1.89	
tblVehicleTrips	WD_TR	9.52	
tblWater	AerobicPercent	87.46	1
tblWater	AerobicPercent	87.46	1
tblWater	AerobicPercent	87.46	1
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	IndoorWaterUseRate	14,659,655.76	11,7
tblWater	IndoorWaterUseRate	10,229,182.02	8,18
tblWater	SepticTankPercent	10.33	

tblWater	SepticTankPercent	10.33	
tblWater	SepticTankPercent	10.33	

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Year	tons/yr											
2022	0.4507	4.5706	3.9437	8.99E-03	0.1649	0.1827	0.3476	0.0314	0.169	0.2004	0	795.52
2023	0.3374	2.4071	3.0032	6.88E-03	0.2588	0.0936	0.3523	0.0697	0.088	0.1577	0	612.306
2024	0.3195	2.2818	2.9506	6.85E-03	0.2608	0.0829	0.3436	0.0702	0.0779	0.1481	0	609.488
2025	0.2983	2.1277	2.8729	6.74E-03	0.2598	0.0713	0.331	0.0699	0.067	0.1369	0	599.813
2026	8.0073	0.6598	0.7388	2.19E-03	0.047	0.0189	0.0659	0.0127	0.0178	0.0306	0	197.589
Maximum	**8.0073**	**4.5706**	**3.9437**	**8.99E-03**	**0.2608**	**0.1827**	**0.3523**	**0.0702**	**0.169**	**0.2004**	**0**	**795.52**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Year	tons/yr											
2022	0.4507	4.5706	3.9437	8.99E-03	0.1649	0.1827	0.3476	0.0314	0.169	0.2004	0	795.526
2023	0.3374	2.4071	3.0032	6.88E-03	0.2588	0.0936	0.3523	0.0697	0.088	0.1577	0	612.306
2024	0.3195	2.2818	2.9506	6.85E-03	0.2608	0.0829	0.3436	0.0702	0.0779	0.1481	0	609.48
2025	0.2983	2.1277	2.8729	6.74E-03	0.2598	0.0713	0.331	0.0699	0.067	0.1369	0	599.813
2026	8.0073	0.6598	0.7388	2.19E-03	0.047	0.0189	0.0659	0.0127	0.0178	0.0306	0	197.589
Maximum	**8.0073**	**4.5706**	**3.9437**	**8.99E-03**	**0.2608**	**0.1827**	**0.3523**	**0.0702**	**0.169**	**0.2004**	**0**	**795.526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG +

1	**5-15-2022**	**8-14-2022**	2.4183	2.4183
2	**8-15-2022**	**11-14-2022**	2.1992	2.1992
3	**11-15-2022**	**2-14-2023**	0.7379	0.7379
4	**2-15-2023**	**5-14-2023**	0.6726	0.6726
5	**5-15-2023**	**8-14-2023**	0.6921	0.6921
6	**8-15-2023**	**11-14-2023**	0.6952	0.6952
7	**11-15-2023**	**2-14-2024**	0.6780	0.6780
8	**2-15-2024**	**5-14-2024**	0.6398	0.6398
9	**5-15-2024**	**8-14-2024**	0.6511	0.6511
10	**8-15-2024**	**11-14-2024**	0.6539	0.6539
11	**11-15-2024**	**2-14-2025**	0.6363	0.6363
12	**2-15-2025**	**5-14-2025**	0.5923	0.5923
13	**5-15-2025**	**8-14-2025**	0.6096	0.6096
14	**8-15-2025**	**11-14-2025**	0.6122	0.6122
15	**11-15-2025**	**2-14-2026**	0.6166	0.6166
16	**2-15-2026**	**5-14-2026**	3.5006	3.5006
17	**5-15-2026**	**8-14-2026**	4.9698	4.9698
		Highest	4.9698	4.9698

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Area	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.216	319.08
Energy	0	0	0	0		0	0		0	0	0	344.827
Mobile	0.6693	2.1725	7.91	0.0274	2.9399	0.0241	2.964	0.7876	0.0224	0.81	0	2,497.1
Waste						0	0		0	0	44.995	0
Water						0	0		0	0	7.0446	42.783
Total	**3.976**	**2.6233**	**14.4873**	**0.0391**	**2.9399**	**0.6359**	**3.5758**	**0.7876**	**0.6342**	**1.4218**	**129.2556**	**3,203.8**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Area	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.216	319.08
Energy	0	0	0	0		0	0		0	0	0	344.827
Mobile	0.6693	2.1725	7.91	0.0274	2.9399	0.0241	2.964	0.7876	0.0224	0.81	0	2,497.1
Waste						0	0		0	0	44.995	0
Water						0	0		0	0	7.0446	42.783
Total	**3.976**	**2.6233**	**14.4873**	**0.0391**	**2.9399**	**0.6359**	**3.5758**	**0.7876**	**0.6342**	**1.4218**	**129.2556**	**3,203.8**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NB
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	5/15/2022	6/14/2022	5	22
2	Site Preparation	Site Preparation	5/15/2022	6/30/2022	5	34
3	Grading	Grading	7/1/2022	10/27/2022	5	85
4	Building Construction	Building Construction	10/28/2022	1/14/2026	5	839
5	Paving	Paving	1/15/2026	4/10/2026	5	62
6	Architectural Coating	Architectural Coating	4/11/2026	7/7/2026	5	62

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 142.5

Acres of Paving: 0

Residential Indoor: 1,027,890; Residential Outdoor: 342,630; Non-Residential Indoor: 0; Non-Residential Ou

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power
Demolition	Concrete/Industrial Saws	1	8.00	81
Demolition	Excavators	3	8.00	158
Demolition	Rubber Tired Dozers	2	8.00	247
Site Preparation	Off-Highway Trucks	4	6.00	402
Site Preparation	Rubber Tired Dozers	0	0.00	247

Site Preparation	Scrapers	4	6.00	367
Site Preparation	Skid Steer Loaders	2	6.00	65
Site Preparation	Tractors/Loaders/Backhoes	2	6.00	97
Grading	Dumpers/Tenders	6	6.00	16
Grading	Excavators	2	6.00	158
Grading	Graders	2	6.00	187
Grading	Off-Highway Tractors	2	6.00	124
Grading	Other Construction Equipment	5	6.00	172
Grading	Rollers	2	6.00	80
Grading	Rubber Tired Dozers	0	0.00	247
Grading	Scrapers	4	6.00	367
Grading	Tractors/Loaders/Backhoes	4	6.00	97
Building Construction	Cranes	1	7.00	231
Building Construction	Forklifts	3	8.00	89
Building Construction	Generator Sets	1	8.00	84
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97
Building Construction	Welders	1	8.00	46
Paving	Dumpers/Tenders	6	6.00	16
Paving	Pavers	1	6.00	130
Paving	Paving Equipment	4	6.00	132
Paving	Plate Compactors	2	6.00	8
Paving	Rollers	2	6.00	80
Architectural Coating	Air Compressors	1	6.00	78

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worke C
Demolition	6	15.00	0.00	60.00	10.80	7.30	20.00	LD_Mix
Site Preparation	12	20.00	4.00	340.00	10.80	7.30	20.00	LD_Mix
Grading	27	40.00	4.00	1,700.00	10.80	7.30	20.00	LD_Mix
Building Construction	9	219.00	41.00	0.00	10.80	7.30	20.00	LD_Mix
Paving	15	20.00	4.00	2,480.00	10.80	7.30	20.00	LD_Mix
Architectural Coating	1	44.00	0.00	0.00	10.80	7.30	20.00	LD_Mix

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO

Category	tons/yr											
Fugitive Dust					6.60E-03	0	6.60E-03	1.00E-03	0	1.00E-03	0	0
Off-Road	0.029	0.2829	0.2265	4.30E-04		0.0137	0.0137		0.0127	0.0127	0	37.3893
Total	**0.029**	**0.2829**	**0.2265**	**4.30E-04**	**6.60E-03**	**0.0137**	**0.0203**	**1.00E-03**	**0.0127**	**0.0137**	**0**	**37.3893**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	2.40E-04	8.78E-03	2.64E-03	2.00E-05	5.00E-04	3.00E-05	5.30E-04	1.40E-04	3.00E-05	1.70E-04	0	2.2808
Vendor	0	0	0	0	0	0	0	0	0	0	0	0
Worker	7.30E-04	4.10E-04	4.53E-03	1.00E-05	1.30E-03	1.00E-05	1.31E-03	3.50E-04	1.00E-05	3.50E-04	0	1.0837
Total	**9.70E-04**	**9.19E-03**	**7.17E-03**	**3.00E-05**	**1.80E-03**	**4.00E-05**	**1.84E-03**	**4.90E-04**	**4.00E-05**	**5.20E-04**	**0**	**3.3646**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					6.6000e-003	0.0000	6.6000e-003	1.0000e-003	0.0000	1.0000e-003	0.0000	0.0000
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3892
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**	**6.6000e-003**	**0.0137**	**0.0203**	**1.0000e-003**	**0.0127**	**0.0137**	**0.0000**	**37.3892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	2.4000e-004	8.7800e-003	2.6400e-003	2.0000e-005	5.0000e-004	3.0000e-005	5.3000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.2808
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	4.1000e-004	4.5300e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.5000e-004	0.0000	1.0837
Total	**9.7000e-004**	**9.1900e-003**	**7.1700e-003**	**3.0000e-005**	**1.8000e-003**	**4.0000e-005**	**1.8400e-003**	**4.9000e-004**	**4.0000e-005**	**5.2000e-004**	**0.0000**	**3.3646**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0	0	0	0	0	0	0	0
Off-Road	0.0747	0.7272	0.5889	1.58E-03		0.0284	0.0284		0.0262	0.0262	0	138.803
Total	**0.0747**	**0.7272**	**0.5889**	**1.58E-03**	**0**	**0.0284**	**0.0284**	**0**	**0.0262**	**0.0262**	**0**	**138.803**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	1.34E-03	0.0498	0.015	1.40E-04	2.82E-03	1.80E-04	3.01E-03	7.70E-04	1.80E-04	9.50E-04	0	12.9248
Vendor	2.20E-04	7.44E-03	2.43E-03	2.00E-05	4.40E-04	2.00E-05	4.60E-04	1.30E-04	2.00E-05	1.50E-04	0	1.7068
Worker	1.50E-03	8.50E-04	9.34E-03	2.00E-05	2.68E-03	2.00E-05	2.70E-03	7.10E-04	2.00E-05	7.30E-04	0	2.2331
Total	**3.06E-03**	**0.0581**	**0.0267**	**1.80E-04**	**5.94E-03**	**2.20E-04**	**6.17E-03**	**1.61E-03**	**2.20E-04**	**1.83E-03**	**0**	**16.8647**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0747	0.7272	0.5889	1.5800e-003		0.0284	0.0284		0.0262	0.0262	0.0000	138.803
Total	**0.0747**	**0.7272**	**0.5889**	**1.5800e-003**	**0.0000**	**0.0284**	**0.0284**	**0.0000**	**0.0262**	**0.0262**	**0.0000**	**138.803**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	1.3400e-003	0.0498	0.0150	1.4000e-004	2.8200e-003	1.8000e-004	3.0100e-003	7.7000e-004	1.8000e-004	9.5000e-004	0.0000	12.9248
Vendor	2.2000e-004	7.4400e-003	2.4300e-003	2.0000e-005	4.4000e-004	2.0000e-005	4.6000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.7068
Worker	1.5000e-003	8.5000e-004	9.3400e-003	2.0000e-005	2.6800e-003	2.0000e-005	2.7000e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.2331
Total	**3.0600e-003**	**0.0581**	**0.0267**	**1.8000e-004**	**5.9400e-003**	**2.2000e-004**	**6.1700e-003**	**1.6100e-003**	**2.2000e-004**	**1.8300e-003**	**0.0000**	**16.8647**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0761	0	0.0761	8.25E-03	0	8.25E-03	0	0
Off-Road	0.2636	2.7466	2.4183	4.68E-03		0.1201	0.1201		0.1108	0.1108	0	409.000
Total	**0.2636**	**2.7466**	**2.4183**	**4.68E-03**	**0.0761**	**0.1201**	**0.1963**	**8.25E-03**	**0.1108**	**0.119**	**0**	**409.000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.70E-03	0.2488	0.0748	6.80E-04	0.0141	9.20E-04	0.0151	3.87E-03	8.80E-04	4.75E-03	0	64.623
Vendor	5.60E-04	0.0186	6.08E-03	5.00E-05	1.10E-03	5.00E-05	1.16E-03	3.20E-04	5.00E-05	3.70E-04	0	4.2669
Worker	7.52E-03	4.24E-03	0.0467	1.20E-04	0.0134	1.00E-04	0.0135	3.56E-03	9.00E-05	3.65E-03	0	11.165
Total	**0.0148**	**0.2717**	**0.1276**	**8.50E-04**	**0.0286**	**1.07E-03**	**0.0297**	**7.75E-03**	**1.02E-03**	**8.77E-03**	**0**	**80.056**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0761	0	0.0761	8.25E-03	0	8.25E-03	0	0
Off-Road	0.2636	2.7466	2.4183	4.68E-03		0.1201	0.1201		0.1108	0.1108	0	408.999
Total	**0.2636**	**2.7466**	**2.4183**	**4.68E-03**	**0.0761**	**0.1201**	**0.1963**	**8.25E-03**	**0.1108**	**0.119**	**0**	**408.999**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.7000e-003	0.2488	0.0748	6.8000e-004	0.0141	9.2000e-004	0.0151	3.8700e-003	8.8000e-004	4.7500e-003	0.0000	64.623
Vendor	5.6000e-004	0.0186	6.0800e-003	5.0000e-005	1.1000e-003	5.0000e-005	1.1600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	4.2669
Worker	7.5200e-003	4.2400e-003	0.0467	1.2000e-004	0.0134	1.0000e-004	0.0135	3.5600e-003	9.0000e-005	3.6500e-003	0.0000	11.165

Total	**0.0148**	**0.2717**	**0.1276**	**8.5000e-004**	**0.0286**	**1.0700e-003**	**0.0297**	**7.7500e-003**	**1.0200e-003**	**8.7700e-003**	**0.0000**	**80.0563**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0392	0.3592	0.3764	6.20E-04		0.0186	0.0186		0.0175	0.0175	0	53.2968
Total	**0.0392**	**0.3592**	**0.3764**	**6.20E-04**		**0.0186**	**0.0186**		**0.0175**	**0.0175**	**0**	**53.2968**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	3.08E-03	0.1032	0.0337	2.50E-04	6.13E-03	2.90E-04	6.42E-03	1.77E-03	2.80E-04	2.05E-03	0	23.6685
Worker	0.0223	0.0126	0.1384	3.70E-04	0.0397	2.90E-04	0.04	0.0106	2.70E-04	0.0108	0	33.083
Total	**0.0254**	**0.1158**	**0.1721**	**6.20E-04**	**0.0458**	**5.80E-04**	**0.0464**	**0.0123**	**5.50E-04**	**0.0129**	**0**	**56.7515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0392	0.3592	0.3764	6.2000e-004		0.0186	0.0186		0.0175	0.0175	0.0000	53.2967
Total	**0.0392**	**0.3592**	**0.3764**	**6.2000e-004**		**0.0186**	**0.0186**		**0.0175**	**0.0175**	**0.0000**	**53.2967**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0800e-003	0.1032	0.0337	2.5000e-004	6.1300e-003	2.9000e-004	6.4200e-003	1.7700e-003	2.8000e-004	2.0500e-003	0.0000	23.6685
Worker	0.0223	0.0126	0.1384	3.7000e-004	0.0397	2.9000e-004	0.0400	0.0106	2.7000e-004	0.0108	0.0000	33.0830

Total	**0.0254**	**0.1158**	**0.1721**	**6.2000e-004**	**0.0458**	**5.8000e-004**	**0.0464**	**0.0123**	**5.5000e-004**	**0.0129**	**0.0000**	**56.7515**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.2045	1.87	2.1117	3.50E-03		0.091	0.091		0.0856	0.0856	0	301.346
Total	**0.2045**	**1.87**	**2.1117**	**3.50E-03**		**0.091**	**0.091**		**0.0856**	**0.0856**	**0**	**301.346**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0141	0.4731	0.1765	1.38E-03	0.0346	1.01E-03	0.0356	0.01	9.70E-04	0.011	0	130.899
Worker	0.1188	0.064	0.7149	1.99E-03	0.2241	1.60E-03	0.2257	0.0596	1.47E-03	0.0611	0	180.061
Total	**0.1329**	**0.5371**	**0.8915**	**3.37E-03**	**0.2588**	**2.61E-03**	**0.2614**	**0.0697**	**2.44E-03**	**0.0721**	**0**	**310.960**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.345
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0141	0.4731	0.1765	1.3800e-003	0.0346	1.0100e-003	0.0356	0.0100	9.7000e-004	0.0110	0.0000	130.899
Worker	0.1188	0.0640	0.7149	1.9900e-003	0.2241	1.6000e-003	0.2257	0.0596	1.4700e-003	0.0611	0.0000	180.061

Total	**0.1329**	**0.5371**	**0.8915**	**3.3700e-003**	**0.2588**	**2.6100e-003**	**0.2614**	**0.0697**	**2.4400e-003**	**0.0721**	**0.0000**	**310.960**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1928	1.7611	2.1179	3.53E-03		0.0803	0.0803		0.0756	0.0756	0	303.722
Total	**0.1928**	**1.7611**	**2.1179**	**3.53E-03**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0**	**303.722**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0136	0.4624	0.1687	1.39E-03	0.0349	9.50E-04	0.0359	0.0101	9.10E-04	0.011	0	131.264
Worker	0.1131	0.0583	0.664	1.93E-03	0.2259	1.57E-03	0.2274	0.0601	1.44E-03	0.0615	0	174.501
Total	**0.1267**	**0.5207**	**0.8328**	**3.32E-03**	**0.2608**	**2.52E-03**	**0.2633**	**0.0702**	**2.35E-03**	**0.0725**	**0**	**305.766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.722
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.722**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0136	0.4624	0.1687	1.3900e-003	0.0349	9.5000e-004	0.0359	0.0101	9.1000e-004	0.0110	0.0000	131.264
Worker	0.1131	0.0583	0.6640	1.9300e-003	0.2259	1.5700e-003	0.2274	0.0601	1.4400e-003	0.0615	0.0000	174.501

Total	**0.1267**	**0.5207**	**0.8328**	**3.3200e-003**	**0.2608**	**2.5200e-003**	**0.2633**	**0.0702**	**2.3500e-003**	**0.0725**	**0.0000**	**305.766**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1785	1.6273	2.0991	3.52E-03		0.0689	0.0689		0.0648	0.0648	0	302.654
Total	**0.1785**	**1.6273**	**2.0991**	**3.52E-03**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0**	**302.654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0131	0.4478	0.1626	1.37E-03	0.0348	8.80E-04	0.0357	0.0101	8.50E-04	0.0109	0	130.167
Worker	0.1068	0.0526	0.6113	1.85E-03	0.225	1.52E-03	0.2265	0.0599	1.40E-03	0.0613	0	166.991
Total	**0.1198**	**0.5004**	**0.7738**	**3.22E-03**	**0.2598**	**2.40E-03**	**0.2622**	**0.0699**	**2.25E-03**	**0.0722**	**0**	**297.158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.654
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0131	0.4478	0.1626	1.3700e-003	0.0348	8.8000e-004	0.0357	0.0101	8.5000e-004	0.0109	0.0000	130.167
Worker	0.1068	0.0526	0.6113	1.8500e-003	0.2250	1.5200e-003	0.2265	0.0599	1.4000e-003	0.0613	0.0000	166.991

Total	**0.1198**	**0.5004**	**0.7738**	**3.2200e-003**	**0.2598**	**2.4000e-003**	**0.2622**	**0.0699**	**2.2500e-003**	**0.0722**	**0.0000**	**297.158**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	6.84E-03	0.0624	0.0804	1.30E-04		2.64E-03	2.64E-03		2.48E-03	2.48E-03	0	11.596
Total	**6.84E-03**	**0.0624**	**0.0804**	**1.30E-04**		**2.64E-03**	**2.64E-03**		**2.48E-03**	**2.48E-03**	**0**	**11.596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	4.80E-04	0.0167	6.05E-03	5.00E-05	1.33E-03	3.00E-05	1.36E-03	3.80E-04	3.00E-05	4.20E-04	0	4.9668
Worker	3.87E-03	1.84E-03	0.0217	7.00E-05	8.62E-03	6.00E-05	8.68E-03	2.29E-03	5.00E-05	2.35E-03	0	6.1645
Total	**4.35E-03**	**0.0185**	**0.0278**	**1.20E-04**	**9.95E-03**	**9.00E-05**	**0.01**	**2.67E-03**	**8.00E-05**	**2.77E-03**	**0**	**11.1313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	6.8400e-003	0.0624	0.0804	1.3000e-004		2.6400e-003	2.6400e-003		2.4800e-003	2.4800e-003	0.0000	11.596
Total	**6.8400e-003**	**0.0624**	**0.0804**	**1.3000e-004**		**2.6400e-003**	**2.6400e-003**		**2.4800e-003**	**2.4800e-003**	**0.0000**	**11.596**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0167	6.0500e-003	5.0000e-005	1.3300e-003	3.0000e-005	1.3600e-003	3.8000e-004	3.0000e-005	4.2000e-004	0.0000	4.9668
Worker	3.8700e-003	1.8400e-003	0.0217	7.0000e-005	8.6200e-003	6.0000e-005	8.6800e-003	2.2900e-003	5.0000e-005	2.3500e-003	0.0000	6.1645

Total	**4.3500e-003**	**0.0185**	**0.0278**	**1.2000e-004**	**9.9500e-003**	**9.0000e-005**	**0.0100**	**2.6700e-003**	**8.0000e-005**	**2.7700e-003**	**0.0000**	**11.1313**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0362	0.298	0.4348	7.40E-04		0.0138	0.0138		0.0129	0.0129	0	62.7486
Paving	0					0	0		0	0	0	0
Total	**0.0362**	**0.298**	**0.4348**	**7.40E-04**		**0.0138**	**0.0138**		**0.0129**	**0.0129**	**0**	**62.7486**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.90E-03	0.232	0.0967	9.50E-04	0.0206	6.80E-04	0.0213	5.65E-03	6.50E-04	6.30E-03	0	90.0245
Vendor	2.90E-04	0.0101	3.66E-03	3.00E-05	8.10E-04	2.00E-05	8.20E-04	2.30E-04	2.00E-05	2.50E-04	0	3.0043
Worker	2.19E-03	1.04E-03	0.0123	4.00E-05	4.88E-03	3.00E-05	4.91E-03	1.30E-03	3.00E-05	1.33E-03	0	3.4904
Total	**9.38E-03**	**0.2431**	**0.1126**	**1.02E-03**	**0.0263**	**7.30E-04**	**0.027**	**7.18E-03**	**7.00E-04**	**7.88E-03**	**0**	**96.5193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0362	0.2980	0.4348	7.4000e-004		0.0138	0.0138		0.0129	0.0129	0.0000	62.7485
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Total	**0.0362**	**0.2980**	**0.4348**	**7.4000e-004**		**0.0138**	**0.0138**		**0.0129**	**0.0129**	**0.0000**	**62.7485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.9000e-003	0.2320	0.0967	9.5000e-004	0.0206	6.8000e-004	0.0213	5.6500e-003	6.5000e-004	6.3000e-003	0.0000	90.0245
Vendor	2.9000e-004	0.0101	3.6600e-003	3.0000e-005	8.1000e-004	2.0000e-005	8.2000e-004	2.3000e-004	2.0000e-005	2.5000e-004	0.0000	3.0043

Worker	2.1900e-003	1.0400e-003	0.0123	4.0000e-005	4.8800e-003	3.0000e-005	4.9100e-003	1.3000e-003	3.0000e-005	1.3300e-003	0.0000	3.4904
Total	**9.3800e-003**	**0.2431**	**0.1126**	**1.0200e-003**	**0.0263**	**7.3000e-004**	**0.0270**	**7.1800e-003**	**7.0000e-004**	**7.8800e-003**	**0.0000**	**96.5193**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Archit. Coating	7.9405					0	0		0	0	0	0
Off-Road	5.30E-03	0.0355	0.0561	9.00E-05		1.60E-03	1.60E-03		1.60E-03	1.60E-03	0	7.9151
Total	**7.9458**	**0.0355**	**0.0561**	**9.00E-05**		**1.60E-03**	**1.60E-03**		**1.60E-03**	**1.60E-03**	**0**	**7.9151**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0	0	0	0	0	0	0	0	0	0	0	0
Worker	4.83E-03	2.29E-03	0.0271	8.00E-05	0.0107	7.00E-05	0.0108	2.86E-03	6.00E-05	2.92E-03	0	7.6789
Total	**4.83E-03**	**2.29E-03**	**0.0271**	**8.00E-05**	**0.0107**	**7.00E-05**	**0.0108**	**2.86E-03**	**6.00E-05**	**2.92E-03**	**0**	**7.6789**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Archit. Coating	7.9405					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-003	0.0355	0.0561	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	7.9151
Total	**7.9458**	**0.0355**	**0.0561**	**9.0000e-005**		**1.6000e-003**	**1.6000e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**7.9151**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8300e-003	2.2900e-003	0.0271	8.0000e-005	0.0107	7.0000e-005	0.0108	2.8600e-003	6.0000e-005	2.9200e-003	0.0000	7.6789
Total	**4.8300e-003**	**2.2900e-003**	**0.0271**	**8.0000e-005**	**0.0107**	**7.0000e-005**	**0.0108**	**2.8600e-003**	**6.0000e-005**	**2.9200e-003**	**0.0000**	**7.6789**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Mitigated	0.6693	2.1725	7.9100	0.0274	2.9399	0.0241	2.9640	0.7876	0.0224	0.8100	0.0000	2,497.106
Unmitigated	0.6693	2.1725	7.9100	0.0274	2.9399	0.0241	2.9640	0.7876	0.0224	0.8100	0.0000	2,497.106

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT
Apartments Low Rise	1,307.25	1,419.75	1203.75	3,748,356
City Park	0.00	0.00	0.00	
Single Family Housing	1,485.22	1,546.45	1343.92	4,221,710
Total	2,792.47	2,966.20	2,547.67	7,970,066

4.3 Trip Type Information

	Miles			Trip %			T
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	D
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS
Apartments Low Rise	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627
City Park	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627
Single Family Housing	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.827
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.827
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2
Land Use	kBTU/yr	tons/yr										
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2
Land Use	kBTU/yr	tons/yr										
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.77E+06	168.3454	0.0233	4.81E-03	170.36
City Park	0	0	0	0	0

Single Family Housing	1.85E+06	176.4819	0.0244	5.04E-03	178.5938
Total		**344.8273**	**0.0476**	**9.85E-03**	**348.9537**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.76732e+006	168.3454	0.0233	4.8100e-003	170.3600
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.85274e+006	176.4819	0.0244	5.0400e-003	178.5938
Total		**344.8273**	**0.0476**	**9.8500e-003**	**348.9537**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Mitigated	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.2160	319.081
Unmitigated	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.2160	319.081

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
SubCategory	tons/yr											
Architectural Coating	0.7941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0106					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Hearth	0.4170	0.4182	3.7429	0.0115		0.5961	0.5961		0.5961	0.5961	77.2160	314.446
Landscaping	0.0851	0.0327	2.8343	1.5000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	4.6344
Total	**3.3067**	**0.4508**	**6.5773**	**0.0117**		**0.6118**	**0.6118**		**0.6118**	**0.6118**	**77.2160**	**319.081**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C

SubCategory	tons/yr											
Architectural Coating	0.7941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0106					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Hearth	0.4170	0.4182	3.7429	0.0115		0.5961	0.5961		0.5961	0.5961	77.2160	314.446
Landscaping	0.0851	0.0327	2.8343	1.5000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	4.6344
Total	**3.3067**	**0.4508**	**6.5773**	**0.0117**		**0.6118**	**0.6118**		**0.6118**	**0.6118**	**77.2160**	**319.081**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	49.8279	0.0302	0.0165	55.5113
Unmitigated	49.8279	0.0302	0.0165	55.5113

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.7277 / 9.24196	13.2752	0.0155	9.2800e-003	16.4304
City Park	0 / 81.8548	27.2896	3.7700e-003	7.8000e-004	27.6162
Single Family Housing	8.18335 / 6.44883	9.2631	0.0108	6.4800e-003	11.4648
Total		**49.8279**	**0.0302**	**0.0165**	**55.5113**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.7277 / 9.24196	13.2752	0.0155	9.2800e-003	16.4304
City Park	0 / 81.8548	27.2896	3.7700e-003	7.8000e-004	27.6162
Single Family Housing	8.18335 / 6.44883	9.2631	0.0108	6.4800e-003	11.4648
Total		**49.8279**	**0.0302**	**0.0165**	**55.5113**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	44.9950	2.6591	0.0000	111.4732
Unmitigated	44.9950	2.6591	0.0000	111.4732

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.5	21.0096	1.2416	0.0000	52.0503
City Park	5.91	1.1997	0.0709	0.0000	2.9722
Single Family Housing	112.25	22.7857	1.3466	0.0000	56.4507
Total		**44.9950**	**2.6591**	**0.0000**	**111.4732**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.5	21.0096	1.2416	0.0000	52.0503
City Park	5.91	1.1997	0.0709	0.0000	2.9722
Single Family Housing	112.25	22.7857	1.3466	0.0000	56.4507
Total		**44.9950**	**2.6591**	**0.0000**	**111.4732**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Date: 9/1/2020 2:04 PM

ıl

age	Floor Surface Area	Population
	2,992,572.00	0
	225,000.00	644
	282,600.00	449

0

027

_CRSR_2019.pdf

or demolition, others based on applicant

w Value
22.00
34.00
35.00
39.00
52.00
52.00
641.40
624.61
0.00
0.00
403.02
567.46
0.00
0.00
0.00
0.00
02.50
.41.30
0.00
0.00
.42.50
0.00
900.00
18.17
30.02
2.00
1.00
4.00
0.00
0.00
4.00
4.00
2.00
6.00
6.00

6.00

6.00

6.00

0.00

0.00

6.00

6.00

6.00

210

40.00

700.00

480.00

4.00

4.00

41.00

4.00

20.00

40.00

19.00

20.00

44.00

6.31

0.00

9.85

5.35

0.00

8.56

5.81

0.00

9.46

.00.00

.00.00

.00.00

0.00

0.00

0.00

27,724.61

3,345.62

0.00

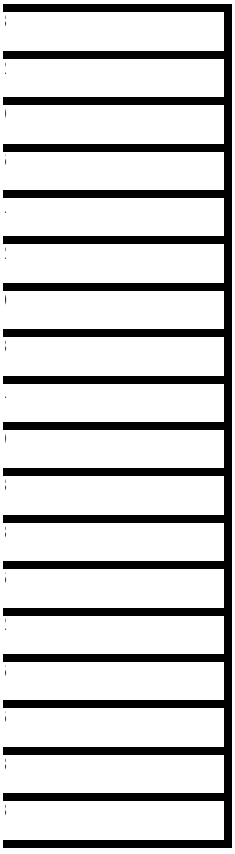
0.00
0.00

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
7	795.527	0.2009	0	800.5481
64	612.3064	0.0782	0	614.2606
63	609.4883	0.0778	0	611.4321
65	599.8135	0.0766	0	601.7276
02	197.5892	0.0227	0	198.1566
7	**795.527**	**0.2009**	**0**	**800.5481**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
62	795.5262	0.2009	0	800.5473
61	612.3061	0.0782	0	614.2602
8	609.488	0.0778	0	611.4318
61	599.8131	0.0766	0	601.7273
01	197.5891	0.0227	0	198.1565
62	**795.5262**	**0.2009**	**0**	**800.5473**

2	**Total CO2**	**CH4**	**N20**	**CO2e**
	0.00	**0.00**	**0.00**	**0.00**

NOX (tons/quarter)



O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
1	396.297	0.3704	0.0226	412.3048
'3	344.8273	0.0476	9.85E-03	348.9537
1	2,497.11	0.0655	0	2,498.74
	44.995	2.6591	0	111.4732
4	49.8279	0.0302	0.0165	55.5113
0	**3,333.05**	**3.1728**	**0.049**	**3,426.99**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
1	396.297	0.3704	0.0226	412.3048
'3	344.8273	0.0476	9.85E-03	348.9537
1	2,497.11	0.0655	0	2,498.74
	44.995	2.6591	0	111.4732
4	49.8279	0.0302	0.0165	55.5113
0	**3,333.05**	**3.1728**	**0.049**	**3,426.99**

ıio-CO2	**Total CO2**	**CH4**	**N20**	**CO2e**
0.00	**0.00**	**0.00**	**0.00**	**0.00**

Phase Description

ıtdoor: 0; Striped Parking Area:

Load Factor
0.73
0.38
0.40
0.38
0.40

0.48
0.37
0.37
0.38
0.38
0.41
0.44
0.42
0.38
0.40
0.48
0.37
0.29
0.20
0.74
0.37
0.45
0.38
0.42
0.36
0.43
0.38
0.48

er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT

O2	Total CO2	CH4	N2O	CO2e

		MT/yr		
	0	0	0	0
3	37.3893	0.0105	0	37.6518
3	**37.3893**	**0.0105**	**0**	**37.6518**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	2.2808	3.00E-05	0	2.2815
	0	0	0	0
	1.0837	3.00E-05	0	1.0845
	3.3646	**6.00E-05**	**0**	**3.3659**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	0.0000	0.0000	0.0000	0.0000
2	37.3892	0.0105	0.0000	37.6518
2	**37.3892**	**0.0105**	**0.0000**	**37.6518**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	2.2808	3.0000e-005	0.0000	2.2815
	0.0000	0.0000	0.0000	0.0000
	1.0837	3.0000e-005	0.0000	1.0845
	3.3646	**6.0000e-005**	**0.0000**	**3.3659**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
6	138.8036	0.0449	0	139.9259
6	**138.8036**	**0.0449**	**0**	**139.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	12.9248	1.40E-04	0	12.9284
	1.7068	3.00E-05	0	1.7075
	2.2331	6.00E-05	0	2.2347
7	**16.8647**	**2.30E-04**	**0**	**16.8705**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	138.8035	0.0449	0.0000	139.9258
5	**138.8035**	**0.0449**	**0.0000**	**139.9258**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	12.9248	1.4000e-004	0.0000	12.9284
	1.7068	3.0000e-005	0.0000	1.7075
	2.2331	6.0000e-005	0.0000	2.2347
7	**16.8647**	**2.3000e-004**	**0.0000**	**16.8705**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
2	409.0002	0.13	0	412.25
2	**409.0002**	**0.13**	**0**	**412.25**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	64.6239	7.20E-04	0	64.6419
	4.2669	7.00E-05	0	4.2686
5	11.1656	3.10E-04	0	11.1733
3	**80.0563**	**1.10E-03**	**0**	**80.0838**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
7	408.9997	0.13	0	412.2495
7	**408.9997**	**0.13**	**0**	**412.2495**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	64.6239	7.2000e-004	0.0000	64.6419
	4.2669	7.0000e-005	0.0000	4.2686
5	11.1656	3.1000e-004	0.0000	11.1733

3	**80.0563**	**1.1000e-003**	**0.0000**	**80.0838**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	53.2968	0.0128	0	53.616
3	**53.2968**	**0.0128**	**0**	**53.616**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
5	23.6685	3.90E-04	0	23.6784
	33.083	9.10E-04	0	33.1057
5	**56.7515**	**1.30E-03**	**0**	**56.7841**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
7	53.2967	0.0128	0.0000	53.6160
7	**53.2967**	**0.0128**	**0.0000**	**53.6160**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	23.6685	3.9000e-004	0.0000	23.6784
0	33.0830	9.1000e-004	0.0000	33.1057

5	**56.7515**	**1.3000e-003**	**0.0000**	**56.7841**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
2	301.3462	0.0717	0	303.1383
2	**301.3462**	**0.0717**	**0**	**303.1383**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
2	130.8992	1.90E-03	0	130.9467
1	180.0611	4.58E-03	0	180.1756
3	**310.9603**	**6.48E-03**	**0**	**311.1223**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
8	301.3458	0.0717	0.0000	303.1380
8	**301.3458**	**0.0717**	**0.0000**	**303.1380**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
2	130.8992	1.9000e-003	0.0000	130.9467
1	180.0611	4.5800e-003	0.0000	180.1756

3	**310.9603**	**6.4800e-003**	**0.0000**	**311.1223**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	303.7223	0.0718	0	305.5179
3	**303.7223**	**0.0718**	**0**	**305.5179**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
5	131.2645	1.79E-03	0	131.3092
5	174.5015	4.14E-03	0	174.605
5	**305.766**	**5.93E-03**	**0**	**305.9142**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
0	303.7220	0.0718	0.0000	305.5175
0	**303.7220**	**0.0718**	**0.0000**	**305.5175**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	131.2645	1.7900e-003	0.0000	131.3092
5	174.5015	4.1400e-003	0.0000	174.6050

0	**305.7660**	**5.9300e-003**	**0.0000**	**305.9142**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	302.6549	0.0711	0	304.4335
9	**302.6549**	**0.0711**	**0**	**304.4335**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
4	130.1674	1.70E-03	0	130.2098
2	166.9912	3.72E-03	0	167.0843
6	**297.1586**	**5.42E-03**	**0**	**297.2941**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	302.6545	0.0711	0.0000	304.4331
5	**302.6545**	**0.0711**	**0.0000**	**304.4331**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
4	130.1674	1.7000e-003	0.0000	130.2098
2	166.9912	3.7200e-003	0.0000	167.0843

6	**297.1586**	**5.4200e-003**	**0.0000**	**297.2941**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	11.596	2.73E-03	0	11.6641
	11.596	**2.73E-03**	**0**	**11.6641**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	4.9668	6.00E-05	0	4.9684
	6.1645	1.30E-04	0	6.1678
3	**11.1313**	**1.90E-04**	**0**	**11.1361**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	11.5960	2.7300e-003	0.0000	11.6641
)	**11.5960**	**2.7300e-003**	**0.0000**	**11.6641**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
	4.9668	6.0000e-005	0.0000	4.9684
	6.1645	1.3000e-004	0.0000	6.1678

3	**11.1313**	**1.9000e-004**	**0.0000**	**11.1361**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	62.7486	0.0183	0	63.2063
	0	0	0	0
5	**62.7486**	**0.0183**	**0**	**63.2063**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	90.0245	7.70E-04	0	90.0437
	3.0043	4.00E-05	0	3.0053
	3.4904	7.00E-05	0	3.4923
3	**96.5193**	**8.80E-04**	**0**	**96.5412**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	62.7485	0.0183	0.0000	63.2062
	0.0000	0.0000	0.0000	0.0000
5	**62.7485**	**0.0183**	**0.0000**	**63.2062**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	90.0245	7.7000e-004	0.0000	90.0437
	3.0043	4.0000e-005	0.0000	3.0053

	3.4904	7.0000e-005	0.0000	3.4923
3	**96.5193**	**8.8000e-004**	**0.0000**	**96.5412**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	7.9151	4.30E-04	0	7.9259
	7.9151	**4.30E-04**	**0**	**7.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	0	0	0	0
	7.6789	1.60E-04	0	7.683
	7.6789	**1.60E-04**	**0**	**7.683**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
	7.9151	4.3000e-004	0.0000	7.9259
	7.9151	**4.3000e-004**	**0.0000**	**7.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			

	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000
	7.6789	1.6000e-004	0.0000	7.6830
	7.6789	**1.6000e-004**	**0.0000**	**7.6830**

)2	Total CO2	CH4	N2O	CO2e
	MT/yr			
)7	2,497.1076	0.0655	0.0000	2,498.7447
)7	2,497.1076	0.0655	0.0000	2,498.7447

Mitigated
Annual VMT
3,748,356
4,221,710
7,970,066

rip Purpose %	
)iverted	Pass-by
11	3
28	6
11	3

UBUS	MCY	SBUS	MH
0.000999	0.004800	0.000764	0.000939
0.000999	0.004800	0.000764	0.000939
0.000999	0.004800	0.000764	0.000939

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	344.8273	0.0476	9.8500e-003	348.9537
3	344.8273	0.0476	9.8500e-003	348.9537
	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000

2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		MT/yr			
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		MT/yr			
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	**0.0000**	**0.0000**	**0.0000**	**0.0000**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
.0	396.2970	0.3704	0.0226	412.3048
.0	396.2970	0.3704	0.0226	412.3048

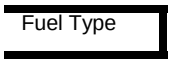
O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
)	0.0000	0.0000	0.0000	0.0000
)	0.0000	0.0000	0.0000	0.0000
36	391.6626	0.3660	0.0226	407.5594
4	4.6344	4.4400e-003	0.0000	4.7454
.0	**396.2970**	**0.3704**	**0.0226**	**412.3048**

O2	Total CO2	CH4	N2O	CO2e

	MT/yr			
)	0.0000	0.0000	0.0000	0.0000
)	0.0000	0.0000	0.0000	0.0000
36	391.6626	0.3660	0.0226	407.5594
ł	4.6344	4.4400e-003	0.0000	4.7454
.0	**396.2970**	**0.3704**	**0.0226**	**412.3048**

Load Factor	Fuel Type


Load Factor
Fuel Type


Fuel Type

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: EL DORADO
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption.

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNI
EL DORAD	2027	All Other B	Aggregate	Aggregate	DSL	45.46046	2427.695	381.8679	0.005229
EL DORAD	2027	LDA	Aggregate	Aggregate	GAS	62638.02	2411770	295341.3	0.071389
EL DORAD	2027	LDA	Aggregate	Aggregate	DSL	837.258	31481.18	3911.46	0.001761
EL DORAD	2027	LDA	Aggregate	Aggregate	ELEC	2356.166	99821.22	11611.44	0
EL DORAD	2027	LDT1	Aggregate	Aggregate	GAS	8908.334	288186.7	39636.77	0.021181
EL DORAD	2027	LDT1	Aggregate	Aggregate	DSL	5.972078	76.99461	19.5758	6.67E-05
EL DORAD	2027	LDT1	Aggregate	Aggregate	ELEC	118.1137	5191.403	589.4844	0
EL DORAD	2027	LDT2	Aggregate	Aggregate	GAS	31885.59	1056810	143531	0.077505
EL DORAD	2027	LDT2	Aggregate	Aggregate	DSL	228.1966	8886.026	1087.967	0.000378
EL DORAD	2027	LDT2	Aggregate	Aggregate	ELEC	532.7833	15833.3	2637.657	0
EL DORAD	2027	LHD1	Aggregate	Aggregate	GAS	2753.211	82839.14	41018.75	0.027855
EL DORAD	2027	LHD1	Aggregate	Aggregate	DSL	3258.523	92311.63	40988.11	0.28571
EL DORAD	2027	LHD2	Aggregate	Aggregate	GAS	212.8819	7218.051	3171.623	0.001275
EL DORAD	2027	LHD2	Aggregate	Aggregate	DSL	1016.348	30627.24	12784.38	0.060671
EL DORAD	2027	MCY	Aggregate	Aggregate	GAS	5256.393	24221.56	10512.79	0.032038
EL DORAD	2027	MDV	Aggregate	Aggregate	GAS	21145.78	638933.2	94132.87	0.049271
EL DORAD	2027	MDV	Aggregate	Aggregate	DSL	672.0982	22813.77	3104.297	0.00128
EL DORAD	2027	MDV	Aggregate	Aggregate	ELEC	332.8519	10186.47	1664.071	0
EL DORAD	2027	MH	Aggregate	Aggregate	GAS	603.3582	4485.017	60.35995	0.001908
EL DORAD	2027	MH	Aggregate	Aggregate	DSL	351.8273	2478.384	35.18273	0.014284
EL DORAD	2027	Motor Coa	Aggregate	Aggregate	DSL	10.99796	1362.172	160.5703	0.002988
EL DORAD	2027	OBUS	Aggregate	Aggregate	GAS	42.86832	1568.115	857.7093	0.000817
EL DORAD	2027	PTO	Aggregate	Aggregate	DSL	0	1614.88	0	0.012199
EL DORAD	2027	SBUS	Aggregate	Aggregate	GAS	20.49279	794.3722	81.97118	0.000628
EL DORAD	2027	SBUS	Aggregate	Aggregate	DSL	155.1608	4865.189	1790.534	0.035973
EL DORAD	2027	T6 Ag	Aggregate	Aggregate	DSL	1.115192	7.040424	4.906845	1.68E-05
EL DORAD	2027	T6 CAIRP h	Aggregate	Aggregate	DSL	11.07825	2031.026	161.7424	0.002083
EL DORAD	2027	T6 CAIRP s	Aggregate	Aggregate	DSL	5.629947	267.9575	82.19722	0.000283
EL DORAD	2027	T6 instate	Aggregate	Aggregate	DSL	20.83533	1279.163	94.1957	0.003453
EL DORAD	2027	T6 instate	Aggregate	Aggregate	DSL	171.2232	8813.503	774.0934	0.020502
EL DORAD	2027	T6 instate	Aggregate	Aggregate	DSL	149.4508	16010.56	1724.642	0.038277
EL DORAD	2027	T6 instate	Aggregate	Aggregate	DSL	639.2539	27928.46	7376.901	0.050567
EL DORAD	2027	T6 OOS he	Aggregate	Aggregate	DSL	5.342326	957.6059	77.99796	0.000996
EL DORAD	2027	T6 OOS sm	Aggregate	Aggregate	DSL	1.831874	80.78655	26.74536	9.19E-05
EL DORAD	2027	T6 Public	Aggregate	Aggregate	DSL	494.7141	8063.216	1500.633	0.017091
EL DORAD	2027	T6 utility	Aggregate	Aggregate	DSL	10.39695	172.4697	119.5649	0.000185
EL DORAD	2027	T6TS	Aggregate	Aggregate	GAS	190.3371	8209.147	3808.264	0.002623
EL DORAD	2027	T7 Ag	Aggregate	Aggregate	DSL	2.996568	11.47369	13.1849	4.68E-05

EL DORAD	2027	T7 CAIRP	Aggregate	Aggregate	DSL	30.98776	5871.92	452.4213	0.014294
EL DORAD	2027	T7 CAIRP c	Aggregate	Aggregate	DSL	5.012078	918.8339	22.65941	0.004139
EL DORAD	2027	T7 NNOOS	Aggregate	Aggregate	DSL	39.10067	7238.812	570.8698	0.015165
EL DORAD	2027	T7 NOOS	Aggregate	Aggregate	DSL	12.34229	2302.494	180.1974	0.005623
EL DORAD	2027	T7 POAK	Aggregate	Aggregate	DSL	0.508371	85.37072	3.86362	0.000398
EL DORAD	2027	T7 Public	Aggregate	Aggregate	DSL	279.6424	5659.478	848.2485	0.033634
EL DORAD	2027	T7 Single	Aggregate	Aggregate	DSL	131.7781	8132.859	1520.701	0.040908
EL DORAD	2027	T7 single c	Aggregate	Aggregate	DSL	32.42397	2279.458	146.5875	0.00859
EL DORAD	2027	T7 SWCV	Aggregate	Aggregate	DSL	54.74706	2233.462	213.5135	0.01069
EL DORAD	2027	T7 tractor	Aggregate	Aggregate	DSL	0.957741	109.7028	12.16331	0.000294
EL DORAD	2027	T7 tractor	Aggregate	Aggregate	DSL	27.54878	1880.352	124.547	0.009349
EL DORAD	2027	T7 utility	Aggregate	Aggregate	DSL	1.42608	28.79541	16.39992	5.83E-05
EL DORAD	2027	T7IS	Aggregate	Aggregate	GAS	1.756639	129.5524	35.14682	0.000465
EL DORAD	2027	UBUS	Aggregate	Aggregate	GAS	31.75192	3043.01	127.0077	0.000641
EL DORAD	2027	UBUS	Aggregate	Aggregate	DSL	41.93432	3689.093	167.7373	0.002758
EL DORAD	2027	UBUS	Aggregate	Aggregate	ELEC	0.00433	0.105476	0.017322	0
EL DORAD	2027	UBUS	Aggregate	Aggregate	NG	0.783912	91.78611	3.135649	5.13E-05

Note 'day' in the unit is operation day.

NOx_IDLE)	NOx_STRE	NOx_TOTE	PM2.5_RU	PM2.5_IDI	PM2.5_STI	PM2.5_TO	PM2.5_PM	PM2.5_PM	PM2.5_TO
0.000143	0.000926	0.006298	1.37E-05	3.42E-08	0	1.37E-05	8.03E-06	0.000149	0.000171
0	0.05032	0.12171	0.003087	0	0.000492	0.003579	0.005317	0.041872	0.050767
0	0	0.001761	0.000143	0	0	0.000143	6.94E-05	0.000547	0.000759
0	0	0	0	0	0	0	0.00022	0.001733	0.001953
0	0.011225	0.032406	0.000458	0	8.92E-05	0.000547	0.000635	0.005003	0.006186
0	0	6.67E-05	6.24E-06	0	0	6.24E-06	1.7E-07	1.34E-06	7.74E-06
0	0	0	0	0	0	0	1.14E-05	9.01E-05	0.000102
0	0.046769	0.124274	0.001465	0	0.000262	0.001727	0.00233	0.018348	0.022404
0	0	0.000378	4.29E-05	0	0	4.29E-05	1.96E-05	0.000154	0.000217
0	0	0	0	0	0	0	3.49E-05	0.000275	0.00031
0.00011	0.023442	0.051407	0.000239	0	2.18E-05	0.000261	0.000183	0.002991	0.003435
0.008108	0	0.293818	0.003279	9.37E-05	0	0.003373	0.000305	0.003334	0.007011
8.02E-06	0.001666	0.002949	1.56E-05	0	1.1E-06	1.67E-05	1.59E-05	0.000304	0.000337
0.002429	0	0.0631	0.000938	2.92E-05	0	0.000967	0.000101	0.00129	0.002358
0	0.003236	0.035274	5.14E-05	0	3.13E-05	8.27E-05	2.67E-05	0.000135	0.000244
0	0.034524	0.083795	0.000881	0	0.000182	0.001062	0.001409	0.011093	0.013564
0	0	0.00128	0.000112	0	0	0.000112	5.03E-05	0.000396	0.000558
0	0	0	0	0	0	0	2.25E-05	0.000177	0.000199
0	2.63E-05	0.001934	6.87E-06	0	1.91E-08	6.89E-06	1.48E-05	0.000276	0.000298
0	0	0.014284	0.000347	0	0	0.000347	1.09E-05	0.000153	0.000511
0.000572	0.000393	0.003953	3.51E-05	1.97E-07	0	3.53E-05	4.5E-06	8.39E-05	0.000124
3.07E-06	0.000315	0.001135	2.09E-06	0	2.64E-07	2.35E-06	5.19E-06	9.66E-05	0.000104
0	0	0.012199	4.64E-05	0	0	4.64E-05	0	0	4.64E-05
2.09E-05	5.04E-05	0.000699	1.37E-06	0	5.9E-08	1.43E-06	1.75E-06	0.00028	0.000283
0.007235	0.001942	0.045149	0.000215	7.29E-06	0	0.000222	1.61E-05	0.001712	0.00195
3.51E-06	2.11E-05	4.14E-05	1.59E-07	8.38E-10	0	1.6E-07	2.33E-08	4.34E-07	6.17E-07
3.49E-05	0.000234	0.002352	2.11E-05	8.33E-09	0	2.11E-05	6.72E-06	0.000125	0.000153
1.77E-05	0.000119	0.00042	2.9E-06	4.23E-09	0	2.91E-06	8.86E-07	1.65E-05	2.03E-05
6.75E-05	0.000273	0.003793	1.6E-05	2.02E-08	0	1.6E-05	4.23E-06	7.88E-05	9.9E-05
0.000541	0.002282	0.023325	8.26E-05	1.31E-07	0	8.27E-05	2.91E-05	0.000543	0.000655
0.000591	0.003688	0.042557	0.00022	4.33E-07	0	0.000221	5.29E-05	0.000986	0.001259
0.002094	0.017088	0.069749	0.000239	5.69E-07	0	0.00024	9.24E-05	0.00172	0.002052
1.68E-05	0.000113	0.001126	1.01E-05	4.02E-09	0	1.01E-05	3.17E-06	5.9E-05	7.23E-05
5.77E-06	3.87E-05	0.000136	9.49E-07	1.38E-09	0	9.5E-07	2.67E-07	4.97E-06	6.19E-06
0.01099	0.004546	0.032627	7.4E-05	6.69E-06	0	8.07E-05	2.67E-05	0.000496	0.000604
8.99E-05	0.000259	0.000534	6.36E-07	2.15E-08	0	6.58E-07	5.7E-07	1.06E-05	1.18E-05
1.87E-05	0.001505	0.004147	1.19E-05	0	1.79E-06	1.37E-05	2.71E-05	0.000505	0.000546
2.85E-05	9.61E-05	0.000171	4.79E-07	9.82E-09	0	4.88E-07	1.14E-07	3.35E-07	9.37E-07

0.004212	0.001111	0.019618	0.000184	1.45E-06	0	0.000186	5.83E-05	0.000171	0.000415
0.000104	0.000114	0.004357	2.07E-05	3.59E-08	0	2.08E-05	9.12E-06	2.68E-05	5.67E-05
0.006596	0.001404	0.023164	0.000187	2.27E-06	0	0.000189	7.18E-05	0.000211	0.000472
0.002082	0.000443	0.008148	7.25E-05	7.17E-07	0	7.32E-05	2.28E-05	6.72E-05	0.000163
1.74E-05	7.56E-06	0.000423	1.53E-06	5.98E-09	0	1.53E-06	8.47E-07	2.49E-06	4.87E-06
0.007006	0.003833	0.044472	0.000172	1.1E-05	0	0.000183	5.61E-05	0.000165	0.000404
0.003816	0.0055	0.050224	0.000251	1.86E-06	0	0.000253	8.07E-05	0.000237	0.000571
0.000677	0.000723	0.00999	4.02E-05	2.48E-07	0	4.05E-05	2.26E-05	6.65E-05	0.00013
0.001869	0.000894	0.013453	3.75E-05	1.62E-06	0	3.91E-05	2.22E-05	6.51E-05	0.000126
2.38E-05	2.4E-05	0.000342	3.64E-06	9.58E-09	0	3.65E-06	1.09E-06	3.2E-06	7.94E-06
0.000573	0.000619	0.010541	4.84E-05	2E-07	0	4.86E-05	1.87E-05	5.48E-05	0.000122
1.18E-05	5.93E-05	0.000129	2.13E-07	4.07E-09	0	2.17E-07	2.86E-07	8.4E-07	1.34E-06
0	8.55E-08	0.000466	8.01E-08	0	5.01E-09	8.51E-08	7.14E-07	3.78E-06	4.58E-06
0	9.24E-05	0.000734	7.16E-06	0	1.03E-07	7.26E-06	8.81E-06	0.000165	0.000181
0	0	0.002758	2.49E-05	0	0	2.49E-05	2.8E-05	0.000143	0.000196
0	0	0	0	0	0	0	1.05E-09	3.08E-09	4.12E-09
0	0	5.13E-05	3.33E-07	0	0	3.33E-07	9.11E-07	2.68E-06	3.92E-06

PM10_RUI	PM10_IDL	PM10_STR	PM10_TOT	PM10_PM	PM10_PM	PM10_TOT	CO2_RUNI	CO2_IDLE	CO2_STRE
1.43E-05	3.57E-08	0	1.44E-05	3.21E-05	0.000349	0.000395	2.684847	0.02978	0
0.003357	0	0.000535	0.003892	0.021268	0.097701	0.122861	612.7938	0	15.68101
0.00015	0	0	0.00015	0.000278	0.001275	0.001703	6.3843	0	0
0	0	0	0	0.00088	0.004044	0.004924	0	0	0
0.000498	0	9.7E-05	0.000595	0.002541	0.011674	0.014811	89.35284	0	2.655738
6.52E-06	0	0	6.52E-06	6.79E-07	3.12E-06	1.03E-05	0.03578	0	0
0	0	0	0	4.58E-05	0.00021	0.000256	0	0	0
0.001593	0	0.000285	0.001878	0.009319	0.042811	0.054009	349.1617	0	10.46485
4.49E-05	0	0	4.49E-05	7.84E-05	0.00036	0.000483	2.458226	0	0
0	0	0	0	0.00014	0.000641	0.000781	0	0	0
0.00026	0	2.37E-05	0.000283	0.000731	0.00698	0.007994	88.75364	0.36009	0.862798
0.003427	9.79E-05	0	0.003525	0.001221	0.007778	0.012524	56.34383	0.489865	0
1.7E-05	0	1.19E-06	1.82E-05	6.37E-05	0.00071	0.000791	8.604791	0.03131	0.072428
0.00098	3.05E-05	0	0.00101	0.000405	0.003011	0.004426	20.70807	0.242639	0
5.49E-05	0	3.32E-05	8.81E-05	0.000107	0.000314	0.000509	5.767022	0	0.749966
0.000958	0	0.000198	0.001156	0.005634	0.025883	0.032673	254.011	0	8.405773
0.000117	0	0	0.000117	0.000201	0.000924	0.001243	8.584037	0	0
0	0	0	0	8.98E-05	0.000413	0.000502	0	0	0
7.48E-06	0	2.08E-08	7.5E-06	5.93E-05	0.000644	0.000711	8.683564	0	0.001709
0.000363	0	0	0.000363	4.37E-05	0.000356	0.000762	2.830651	0	0
3.67E-05	2.06E-07	0	3.69E-05	1.8E-05	0.000196	0.000251	2.069879	0.120337	0
2.27E-06	0	2.87E-07	2.56E-06	2.07E-05	0.000225	0.000249	2.840292	0.017077	0.025121
4.85E-05	0	0	4.85E-05	0	0	4.85E-05	3.529371	0	0
1.49E-06	0	6.41E-08	1.55E-06	7.01E-06	0.000652	0.000661	0.714299	0.05516	0.00455
0.000224	7.62E-06	0	0.000232	6.44E-05	0.003994	0.004291	5.877504	0.61319	0
1.66E-07	8.76E-10	0	1.67E-07	9.31E-08	1.01E-06	1.27E-06	0.00824	0.000804	0
2.21E-05	8.7E-09	0	2.21E-05	2.69E-05	0.000292	0.000341	1.748125	0.006709	0
3.03E-06	4.42E-09	0	3.04E-06	3.54E-06	3.85E-05	4.51E-05	0.251479	0.003417	0
1.67E-05	2.11E-08	0	1.68E-05	1.69E-05	0.000184	0.000217	1.603481	0.013738	0
8.63E-05	1.37E-07	0	8.64E-05	0.000117	0.001266	0.001469	10.72	0.109509	0
0.00023	4.53E-07	0	0.000231	0.000212	0.0023	0.002743	16.26228	0.098422	0
0.00025	5.95E-07	0	0.000251	0.000369	0.004013	0.004633	29.70691	0.418049	0
1.06E-05	4.2E-09	0	1.06E-05	1.27E-05	0.000138	0.000161	0.828966	0.003254	0
9.92E-07	1.44E-09	0	9.93E-07	1.07E-06	1.16E-05	1.37E-05	0.07762	0.001141	0
7.73E-05	6.99E-06	0	8.43E-05	0.000107	0.001158	0.001349	8.865435	1.64316	0
6.65E-07	2.25E-08	0	6.88E-07	2.28E-06	2.48E-05	2.77E-05	0.17286	0.017484	0
1.29E-05	0	1.95E-06	1.49E-05	0.000109	0.001179	0.001303	14.63454	0.105993	0.15331
5E-07	1.03E-08	0	5.1E-07	4.55E-07	7.81E-07	1.75E-06	0.020583	0.006804	0

0.000193	1.52E-06	0	0.000194	0.000233	0.0004	0.000827	7.678642	0.821962	0
2.17E-05	3.75E-08	0	2.17E-05	3.65E-05	6.25E-05	0.000121	1.541201	0.019959	0
0.000195	2.38E-06	0	0.000198	0.000287	0.000493	0.000978	8.723283	1.203969	0
7.58E-05	7.5E-07	0	7.65E-05	9.14E-05	0.000157	0.000325	3.017834	0.406981	0
1.6E-06	6.25E-09	0	1.6E-06	3.39E-06	5.81E-06	1.08E-05	0.14744	0.003561	0
0.000179	1.15E-05	0	0.000191	0.000225	0.000385	0.000801	9.538203	0.893186	0
0.000262	1.94E-06	0	0.000264	0.000323	0.000553	0.00114	13.39315	0.760284	0
4.2E-05	2.59E-07	0	4.23E-05	9.05E-05	0.000155	0.000288	4.111637	0.136865	0
3.91E-05	1.69E-06	0	4.08E-05	8.86E-05	0.000152	0.000281	8.93471	0.232531	0
3.81E-06	1E-08	0	3.82E-06	4.35E-06	7.47E-06	1.56E-05	0.145388	0.004673	0
5.06E-05	2.09E-07	0	5.08E-05	7.46E-05	0.000128	0.000253	3.421104	0.116732	0
2.23E-07	4.25E-09	0	2.27E-07	1.14E-06	1.96E-06	3.33E-06	0.049372	0.002547	0
8.71E-08	0	5.45E-09	9.26E-08	2.86E-06	8.82E-06	1.18E-05	0.293364	0	0.001747
7.79E-06	0	1.12E-07	7.9E-06	3.52E-05	0.000386	0.000429	5.42885	0	0.009685
2.6E-05	0	0	2.6E-05	0.000112	0.000333	0.000472	5.42265	0	0
0	0	0	0	4.19E-09	7.18E-09	1.14E-08	0	0	0
3.48E-07	0	0	3.48E-07	3.64E-06	6.25E-06	1.02E-05	0.210287	0	0

CO2_TOTE	CH4_RUNI	CH4_IDLE	CH4_STRE	CH4_TOTE	N2O_RUNI	N2O_IDLE	N2O_STRE	N2O_TOTE	ROG_RUNI
2.714626	1.3E-06	1.15E-07	0	1.42E-06	0.000422	4.68E-06	0	0.000427	2.81E-05
628.4748	0.004015	0	0.013264	0.017279	0.009699	0	0.007388	0.017087	0.014363
6.3843	1.71E-05	0	0	1.71E-05	0.001004	0	0	0.001004	0.000368
0	0	0	0	0	0	0	0	0	0
92.00858	0.001118	0	0.003039	0.004157	0.001866	0	0.001222	0.003088	0.004862
0.03578	4.05E-07	0	0	4.05E-07	5.62E-06	0	0	5.62E-06	8.71E-06
0	0	0	0	0	0	0	0	0	0
359.6266	0.003641	0	0.011326	0.014967	0.006674	0	0.004951	0.011625	0.014991
2.458226	6.91E-06	0	0	6.91E-06	0.000386	0	0	0.000386	0.000149
0	0	0	0	0	0	0	0	0	0
89.97652	0.001307	0.000338	0.001195	0.00284	0.001533	8.55E-06	0.001729	0.003271	0.006578
56.83369	0.000929	1.83E-05	0	0.000947	0.008856	7.7E-05	0	0.008933	0.019998
8.708529	4.44E-05	2.61E-05	7.29E-05	0.000143	8.64E-05	6.77E-07	0.000132	0.00022	0.000194
20.9507	0.000264	5.71E-06	0	0.00027	0.003255	3.81E-05	0	0.003293	0.00568
6.516988	0.009401	0	0.003217	0.012617	0.001803	0	0.000179	0.001982	0.065845
262.4167	0.002355	0	0.008357	0.010712	0.004213	0	0.003371	0.007584	0.009912
8.584037	1.34E-05	0	0	1.34E-05	0.001349	0	0	0.001349	0.000289
0	0	0	0	0	0	0	0	0	0
8.685273	5.9E-05	0	2.18E-06	6.12E-05	0.000123	0	2.75E-06	0.000125	0.000246
2.830651	1.83E-05	0	0	1.83E-05	0.000445	0	0	0.000445	0.000393
2.190216	1.31E-06	2.25E-06	0	3.56E-06	0.000325	1.89E-05	0	0.000344	2.81E-05
2.882489	2.33E-05	9.04E-06	3E-05	6.24E-05	3.96E-05	2.47E-07	2.34E-05	6.32E-05	0.000115
3.529371	7.36E-06	0	0	7.36E-06	0.000555	0	0	0.000555	0.000158
0.774008	1.6E-05	5.35E-05	6.04E-06	7.55E-05	2.97E-05	1.92E-06	4.46E-06	3.61E-05	8.09E-05
6.490694	2.42E-05	2.04E-06	0	2.62E-05	0.000924	9.64E-05	0	0.00102	0.00052
0.009044	3.82E-09	2.82E-09	0	6.63E-09	1.3E-06	1.26E-07	0	1.42E-06	8.22E-08
1.754834	8.07E-07	2.8E-08	0	8.35E-07	0.000275	1.05E-06	0	0.000276	1.74E-05
0.254896	1.08E-07	1.42E-08	0	1.22E-07	3.95E-05	5.37E-07	0	4.01E-05	2.33E-06
1.61722	1.47E-06	5.28E-08	0	1.52E-06	0.000252	2.16E-06	0	0.000254	3.17E-05
10.82951	6.85E-06	4.32E-07	0	7.28E-06	0.001685	1.72E-05	0	0.001702	0.000148
16.3607	1.81E-05	3.95E-07	0	1.85E-05	0.002556	1.55E-05	0	0.002572	0.00039
30.12496	1.61E-05	1.62E-06	0	1.77E-05	0.00467	6.57E-05	0	0.004735	0.000346
0.832221	3.83E-07	1.35E-08	0	3.97E-07	0.00013	5.12E-07	0	0.000131	8.25E-06
0.078761	3.37E-08	4.63E-09	0	3.84E-08	1.22E-05	1.79E-07	0	1.24E-05	7.26E-07
10.5086	9.62E-06	6.74E-06	0	1.64E-05	0.001394	0.000258	0	0.001652	0.000207
0.190344	6.48E-08	7.22E-08	0	1.37E-07	2.72E-05	2.75E-06	0	2.99E-05	1.4E-06
14.89385	7.45E-05	5.57E-05	0.000153	0.000283	0.000144	1.62E-06	0.000121	0.000266	0.000355
0.027387	1.3E-08	1.12E-07	0	1.25E-07	3.24E-06	1.07E-06	0	4.3E-06	2.8E-07

8.500603	6.19E-06	1.66E-05	0	2.27E-05	0.001207	0.000129	0	0.001336	0.000133
1.561161	1.68E-06	4.09E-07	0	2.09E-06	0.000242	3.14E-06	0	0.000245	3.62E-05
9.927252	6.94E-06	2.59E-05	0	3.29E-05	0.001371	0.000189	0	0.00156	0.000149
3.424816	2.43E-06	8.18E-06	0	1.06E-05	0.000474	6.4E-05	0	0.000538	5.24E-05
0.151001	1.33E-07	6.82E-08	0	2.01E-07	2.32E-05	5.6E-07	0	2.37E-05	2.86E-06
10.43139	2.01E-05	1.67E-05	0	3.69E-05	0.001499	0.00014	0	0.00164	0.000434
14.15344	2.47E-05	1.38E-05	0	3.85E-05	0.002105	0.00012	0	0.002225	0.000531
4.248501	4.41E-06	2.63E-06	0	7.04E-06	0.000646	2.15E-05	0	0.000668	9.5E-05
9.167241	4.03E-06	3.95E-06	0	7.98E-06	0.001404	3.66E-05	0	0.001441	8.68E-05
0.15006	1.34E-07	9E-08	0	2.24E-07	2.29E-05	7.34E-07	0	2.36E-05	2.89E-06
3.537835	3.93E-06	2.24E-06	0	6.18E-06	0.000538	1.83E-05	0	0.000556	8.46E-05
0.05192	2.33E-08	4.64E-08	0	6.97E-08	7.76E-06	4E-07	0	8.16E-06	5.02E-07
0.295111	1.1E-05	0	3.6E-09	1.1E-05	1.99E-05	0	4.15E-09	1.99E-05	4.94E-05
5.438535	1.71E-05	0	1.25E-05	2.96E-05	6.03E-05	0	8.89E-06	6.92E-05	5.47E-05
5.42265	0.000258	0	0	0.000258	0.000852	0	0	0.000852	5.79E-05
0	0	0	0	0	0	0	0	0	0
0.210287	0.000679	0	0	0.000679	4.29E-05	0	0	4.29E-05	9.71E-06

ROG_IDLE	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HTSK	ROG_RUN	ROG_REST	ROG_TOTA	TOG_RUNI	TOG_IDLE
2.47E-06	0	3.05E-05	0	0	0	0	3.05E-05	3.2E-05	2.81E-06
0	0.057023	0.071386	0.011212	0.026033	0.064125	0.007708	0.180463	0.020958	0
0	0	0.000368	0	0	0	0	0.000368	0.000419	0
0	0	0	5.15E-05	6.26E-05	0	1.32E-05	0.000127	0	0
0	0.015776	0.020638	0.005235	0.009876	0.036838	0.003271	0.075858	0.007094	0
0	0	8.71E-06	0	0	0	0	8.71E-06	9.92E-06	0
0	0	0	2.6E-06	3.18E-06	0	6.69E-07	6.45E-06	0	0
0	0.055662	0.070652	0.013804	0.027104	0.097518	0.009973	0.219052	0.021874	0
0	0	0.000149	0	0	0	0	0.000149	0.000169	0
0	0	0	1.17E-05	1.42E-05	0	3.01E-06	2.89E-05	0	0
0.001259	0.006353	0.014189	0.000223	0.008983	0.084385	8.78E-05	0.107868	0.009598	0.001837
0.000394	0	0.020392	0	0	0	0	0.020392	0.022767	0.000449
9.2E-05	0.000361	0.000647	8.74E-06	0.000374	0.002514	3.93E-06	0.003548	0.000283	0.000134
0.000123	0	0.005803	0	0	0	0	0.005803	0.006466	0.00014
0	0.025368	0.091213	0.013442	0.010663	0.0242	0.006115	0.145633	0.080756	0
0	0.043245	0.053157	0.010655	0.019842	0.067411	0.007888	0.158953	0.014464	0
0	0	0.000289	0	0	0	0	0.000289	0.000329	0
0	0	0	7.33E-06	8.97E-06	0	1.88E-06	1.82E-05	0	0
0	8.89E-06	0.000255	6.87E-05	5.78E-06	0.000121	2.07E-05	0.000471	0.000359	0
0	0	0.000393	0	0	0	0	0.000393	0.000448	0
4.84E-05	0	7.66E-05	0	0	0	0	7.66E-05	3.2E-05	5.51E-05
3.53E-05	0.000166	0.000316	2.28E-06	3.59E-05	0.000408	7.86E-07	0.000763	0.000167	5.15E-05
0	0	0.000158	0	0	0	0	0.000158	0.00018	0
0.000239	3.6E-05	0.000356	8.83E-07	8.54E-06	5.42E-05	2.83E-07	0.00042	0.000118	0.000349
4.38E-05	0	0.000564	0	0	0	0	0.000564	0.000593	4.99E-05
6.06E-08	0	1.43E-07	0	0	0	0	1.43E-07	9.35E-08	6.9E-08
6.02E-07	0	1.8E-05	0	0	0	0	1.8E-05	1.98E-05	6.86E-07
3.06E-07	0	2.64E-06	0	0	0	0	2.64E-06	2.65E-06	3.49E-07
1.14E-06	0	3.28E-05	0	0	0	0	3.28E-05	3.61E-05	1.29E-06
9.31E-06	0	0.000157	0	0	0	0	0.000157	0.000168	1.06E-05
8.51E-06	0	0.000399	0	0	0	0	0.000399	0.000444	9.69E-06
3.48E-05	0	0.000381	0	0	0	0	0.000381	0.000394	3.96E-05
2.91E-07	0	8.54E-06	0	0	0	0	8.54E-06	9.39E-06	3.31E-07
9.96E-08	0	8.26E-07	0	0	0	0	8.26E-07	8.27E-07	1.13E-07
0.000145	0	0.000352	0	0	0	0	0.000352	0.000236	0.000165
1.55E-06	0	2.95E-06	0	0	0	0	2.95E-06	1.59E-06	1.77E-06
0.000214	0.000818	0.001387	6.33E-06	0.000331	0.001857	2.79E-06	0.003584	0.000518	0.000312
2.41E-06	0	2.69E-06	0	0	0	0	2.69E-06	3.19E-07	2.75E-06

0.000356	0	0.00049	0	0	0	0	0.00049	0.000152	0.000406
8.81E-06	0	4.5E-05	0	0	0	0	4.5E-05	4.12E-05	1E-05
0.000558	0	0.000708	0	0	0	0	0.000708	0.00017	0.000635
0.000176	0	0.000229	0	0	0	0	0.000229	5.96E-05	0.000201
1.47E-06	0	4.33E-06	0	0	0	0	4.33E-06	3.25E-06	1.67E-06
0.00036	0	0.000794	0	0	0	0	0.000794	0.000494	0.00041
0.000298	0	0.000829	0	0	0	0	0.000829	0.000604	0.000339
5.66E-05	0	0.000152	0	0	0	0	0.000152	0.000108	6.45E-05
8.5E-05	0	0.000172	0	0	0	0	0.000172	9.88E-05	9.68E-05
1.94E-06	0	4.83E-06	0	0	0	0	4.83E-06	3.29E-06	2.21E-06
4.83E-05	0	0.000133	0	0	0	0	0.000133	9.63E-05	5.5E-05
9.99E-07	0	1.5E-06	0	0	0	0	1.5E-06	5.72E-07	1.14E-06
0	1.88E-08	4.94E-05	6.66E-08	2.71E-06	1.44E-05	3.39E-08	6.66E-05	7.2E-05	0
0	5.17E-05	0.000106	4.03E-07	4.03E-06	2.17E-05	1.8E-07	0.000133	7.99E-05	0
0	0	5.79E-05	0	0	0	0	5.79E-05	0.000322	0
0	0	0	0	0	0	0	0	0	0
0	0	9.71E-06	0	0	0	0	9.71E-06	0.000693	0

TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HTSK	TOG_RUNI	TOG_REST	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX
0	3.48E-05	0	0	0	0	3.48E-05	0.000362	0.000105	0
0.062433	0.083391	0.011212	0.026033	0.064125	0.007708	0.192468	1.408956	0	0.687856
0	0.000419	0	0	0	0	0.000419	0.007105	0	0
0	0	5.15E-05	6.26E-05	0	1.32E-05	0.000127	0	0	0
0.017273	0.024367	0.005235	0.009876	0.036838	0.003271	0.079587	0.278791	0	0.104105
0	9.92E-06	0	0	0	0	9.92E-06	6.73E-05	0	0
0	0	2.6E-06	3.18E-06	0	6.69E-07	6.45E-06	0	0	0
0.060943	0.082817	0.013804	0.027104	0.097518	0.009973	0.231216	0.948379	0	0.465101
0	0.000169	0	0	0	0	0.000169	0.001511	0	0
0	0	1.17E-05	1.42E-05	0	3.01E-06	2.89E-05	0	0	0
0.006955	0.018391	0.000223	0.008983	0.084385	8.78E-05	0.11207	0.139843	0.011323	0.093408
0	0.023215	0	0	0	0	0.023215	0.097923	0.003268	0
0.000395	0.000812	8.74E-06	0.000374	0.002514	3.93E-06	0.003713	0.004101	0.000884	0.0058
0	0.006606	0	0	0	0	0.006606	0.028245	0.001019	0
0.027594	0.10835	0.013442	0.010663	0.0242	0.006115	0.16277	0.555689	0	0.113868
0.047348	0.061812	0.010655	0.019842	0.067411	0.007888	0.167608	0.578447	0	0.336824
0	0.000329	0	0	0	0	0.000329	0.005812	0	0
0	0	7.33E-06	8.97E-06	0	1.88E-06	1.82E-05	0	0	0
9.74E-06	0.000369	6.87E-05	5.78E-06	0.000121	2.07E-05	0.000585	0.0059	0	0.00019
0	0.000448	0	0	0	0	0.000448	0.001441	0	0
0	8.72E-05	0	0	0	0	8.72E-05	0.000261	0.000716	0
0.000182	0.000401	2.28E-06	3.59E-05	0.000408	7.86E-07	0.000847	0.002514	0.000273	0.00371
0	0.00018	0	0	0	0	0.00018	0.001034	0	0
3.94E-05	0.000507	8.83E-07	8.54E-06	5.42E-05	2.83E-07	0.000571	0.001794	0.001851	0.000975
0	0.000642	0	0	0	0	0.000642	0.001474	0.001119	0
0	1.63E-07	0	0	0	0	1.63E-07	6.4E-07	2.57E-06	0
0	2.05E-05	0	0	0	0	2.05E-05	0.000144	2.55E-05	0
0	3E-06	0	0	0	0	3E-06	1.93E-05	1.3E-05	0
0	3.73E-05	0	0	0	0	3.73E-05	0.000289	4.76E-05	0
0	0.000179	0	0	0	0	0.000179	0.001821	0.000394	0
0	0.000454	0	0	0	0	0.000454	0.002351	0.000323	0
0	0.000434	0	0	0	0	0.000434	0.003418	0.001456	0
0	9.72E-06	0	0	0	0	9.72E-06	6.83E-05	1.23E-05	0
0	9.4E-07	0	0	0	0	9.4E-07	6.02E-06	4.22E-06	0
0	0.000401	0	0	0	0	0.000401	0.001162	0.005394	0
0	3.36E-06	0	0	0	0	3.36E-06	1.63E-05	6.58E-05	0
0.000895	0.001725	6.33E-06	0.000331	0.001857	2.79E-06	0.003923	0.007805	0.003189	0.018559
0	3.06E-06	0	0	0	0	3.06E-06	2.38E-06	3.56E-05	0

0	0.000557	0	0	0	0	0.000557	0.001239	0.005266	0
0	5.13E-05	0	0	0	0	5.13E-05	0.000505	0.00013	0
0	0.000806	0	0	0	0	0.000806	0.001388	0.008247	0
0	0.00026	0	0	0	0	0.00026	0.000487	0.002603	0
0	4.92E-06	0	0	0	0	4.92E-06	4.08E-05	2.17E-05	0
0	0.000904	0	0	0	0	0.000904	0.002129	0.004511	0
0	0.000944	0	0	0	0	0.000944	0.0029	0.004329	0
0	0.000173	0	0	0	0	0.000173	0.001076	0.000835	0
0	0.000196	0	0	0	0	0.000196	0.000234	0.00102	0
0	5.5E-06	0	0	0	0	5.5E-06	2.16E-05	2.84E-05	0
0	0.000151	0	0	0	0	0.000151	0.001101	0.000713	0
0	1.71E-06	0	0	0	0	1.71E-06	6.55E-06	1.48E-05	0
2.05E-08	7.2E-05	6.66E-08	2.71E-06	1.44E-05	3.39E-08	8.93E-05	0.004557	0	0.000144
5.66E-05	0.000136	4.03E-07	4.03E-06	2.17E-05	1.8E-07	0.000163	0.000917	0	0.000975
0	0.000322	0	0	0	0	0.000322	0.00065	0	0
0	0	0	0	0	0	0	0	0	0
0	0.000693	0	0	0	0	0.000693	0.005303	0	0

CO_TOTEX	SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTE	Fuel Consumption
0.000467	2.54E-05	2.81E-07	0	2.56E-05	0.241936
2.096812	0.006064	0	0.000155	0.006219	66.33753
0.007105	6.04E-05	0	0	6.04E-05	0.568988
0	0	0	0	0	0
0.382896	0.000884	0	2.63E-05	0.00091	9.7118
6.73E-05	3.38E-07	0	0	3.38E-07	0.003189
0	0	0	0	0	0
1.41348	0.003455	0	0.000104	0.003559	37.95973
0.001511	2.32E-05	0	0	2.32E-05	0.219085
0	0	0	0	0	0
0.244574	0.000878	3.56E-06	8.54E-06	0.00089	9.49731
0.101191	0.000533	4.63E-06	0	0.000537	5.065191
0.010785	8.52E-05	3.1E-07	7.17E-07	8.62E-05	0.919213
0.029264	0.000196	2.29E-06	0	0.000198	1.86719
0.669557	5.71E-05	0	7.42E-06	6.45E-05	0.687889
0.915272	0.002514	0	8.32E-05	0.002597	27.69893
0.005812	8.12E-05	0	0	8.12E-05	0.765035
0	0	0	0	0	0
0.00609	8.59E-05	0	1.69E-08	8.59E-05	0.916758
0.001441	2.68E-05	0	0	2.68E-05	0.252276
0.000977	1.96E-05	1.14E-06	0	2.07E-05	0.195199
0.006497	2.81E-05	1.69E-07	2.49E-07	2.85E-05	0.304256
0.001034	3.33E-05	0	0	3.33E-05	0.314548
0.004621	7.07E-06	5.46E-07	4.5E-08	7.66E-06	0.081699
0.002593	5.55E-05	5.79E-06	0	6.13E-05	0.57847
3.21E-06	7.78E-08	7.59E-09	0	8.54E-08	0.000806
0.00017	1.65E-05	6.34E-08	0	1.66E-05	0.156396
3.23E-05	2.38E-06	3.23E-08	0	2.41E-06	0.022717
0.000337	1.51E-05	1.3E-07	0	1.53E-05	0.144132
0.002215	0.000101	1.03E-06	0	0.000102	0.965158
0.002674	0.000154	9.3E-07	0	0.000155	1.458115
0.004873	0.000281	3.95E-06	0	0.000285	2.684828
8.07E-05	7.83E-06	3.07E-08	0	7.86E-06	0.07417
1.02E-05	7.33E-07	1.08E-08	0	7.44E-07	0.007019
0.006556	8.38E-05	1.55E-05	0	9.93E-05	0.936558
8.21E-05	1.63E-06	1.65E-07	0	1.8E-06	0.016964
0.029552	0.000145	1.05E-06	1.52E-06	0.000147	1.572093
3.8E-05	1.94E-07	6.43E-08	0	2.59E-07	0.002441

0.006505	7.25E-05	7.77E-06	0	8.03E-05	0.7576
0.000635	1.46E-05	1.89E-07	0	1.47E-05	0.139135
0.009636	8.24E-05	1.14E-05	0	9.38E-05	0.884747
0.00309	2.85E-05	3.84E-06	0	3.24E-05	0.30523
6.25E-05	1.39E-06	3.36E-08	0	1.43E-06	0.013458
0.00664	9.01E-05	8.44E-06	0	9.86E-05	0.929677
0.00723	0.000127	7.18E-06	0	0.000134	1.261397
0.001911	3.88E-05	1.29E-06	0	4.01E-05	0.378639
0.001253	8.44E-05	2.2E-06	0	8.66E-05	0.817012
4.99E-05	1.37E-06	4.41E-08	0	1.42E-06	0.013374
0.001814	3.23E-05	1.1E-06	0	3.34E-05	0.315303
2.13E-05	4.66E-07	2.41E-08	0	4.91E-07	0.004627
0.004701	2.9E-06	0	1.73E-08	2.92E-06	0.03115
0.001892	5.37E-05	0	9.58E-08	5.38E-05	0.574055
0.00065	5.13E-05	0	0	5.13E-05	0.483283
0	0	0	0	0	0
0.005303	0	0	0	0	0.024306

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: EL DORADO
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel

Region	Calendar Year	Vehicle Category	Fleet %	Project VMT
EL DORADO	2027	HHDT	0.009477	75532.31505
EL DORADO	2027	HHDT		
EL DORADO	2027	LDA		
EL DORADO	2027	LDA	0.557019	4439478.168
EL DORADO	2027	LDA		
EL DORADO	2027	LDT1		
EL DORADO	2027	LDT1	0.034577	275580.9705
EL DORADO	2027	LDT1		
EL DORADO	2027	LDT2		
EL DORADO	2027	LDT2	0.225137	1794356.739
EL DORADO	2027	LDT2		
EL DORADO	2027	LHDT1	0.020027	159616.5109
EL DORADO	2027	LHDT1		
EL DORADO	2027	LHDT2	0.004692	37395.54946
EL DORADO	2027	LHDT2		
EL DORADO	2027	MCY	0.004800	38256.31658
EL DORADO	2027	MDV		
EL DORADO	2027	MDV	0.122292	974675.3057
EL DORADO	2027	MDV		
EL DORADO	2027	MH	0.000939	7483.891931
EL DORADO	2027	MH		
EL DORADO	2027	MHDT	0.017649	140663.694
EL DORADO	2027	MHDT		
EL DORADO	2027	OBUS	0.001627	12967.29731
EL DORADO	2027	OBUS		
EL DORADO	2027	SBUS	0.000764	6089.130389
EL DORADO	2027	SBUS		
EL DORADO	2027	UBUS		
EL DORADO	2027	UBUS	0.000999	7962.095889
EL DORADO	2027	UBUS		
EL DORADO	2027	UBUS		
				7970057.985

Consumption. Note 'day' in the unit is operation day.

Project VMT	Model Year	Speed	Fuel	Population
254.182983	Aggregated	Aggregated	GAS	1.756638555
75278.13207	Aggregated	Aggregated	DSL	619.4718349
4210261.703	Aggregated	Aggregated	GAS	62638.01522
54957.13915	Aggregated	Aggregated	DSL	837.2580136
174259.3255	Aggregated	Aggregated	ELEC	2356.16568
270633.4675	Aggregated	Aggregated	GAS	8908.334445
72.30491814	Aggregated	Aggregated	DSL	5.972078296
4875.198076	Aggregated	Aggregated	ELEC	118.1137091
1753345.103	Aggregated	Aggregated	GAS	31885.59274
14742.73775	Aggregated	Aggregated	DSL	228.1965918
26268.89769	Aggregated	Aggregated	ELEC	532.7833075
75492.07184	Aggregated	Aggregated	GAS	2753.21131
84124.43904	Aggregated	Aggregated	DSL	3258.522528
7132.273175	Aggregated	Aggregated	GAS	212.8818917
30263.27628	Aggregated	Aggregated	DSL	1016.348222
38256.31658	Aggregated	Aggregated	GAS	5256.393374
926806.6977	Aggregated	Aggregated	GAS	21145.78089
33092.58739	Aggregated	Aggregated	DSL	672.0981672
14776.02059	Aggregated	Aggregated	ELEC	332.8518675
4820.256986	Aggregated	Aggregated	GAS	603.3581832
2663.634946	Aggregated	Aggregated	DSL	351.8272892
15642.29721	Aggregated	Aggregated	GAS	190.3370534
125021.3968	Aggregated	Aggregated	DSL	1510.871917
3795.124018	Aggregated	Aggregated	GAS	42.86831764
9172.17329	Aggregated	Aggregated	DSL	56.45842628
854.6663322	Aggregated	Aggregated	GAS	20.49279437
5234.464057	Aggregated	Aggregated	DSL	155.1608199
3550.521377	Aggregated	Aggregated	GAS	31.75191598
4304.357313	Aggregated	Aggregated	DSL	41.93432272
0.123067025	Aggregated	Aggregated	ELEC	0.004330414
107.0941314	Aggregated	Aggregated	NG	0.78391232
7970057.985				

VMT		Trips	NOx_RUNEX
129.5524367	0.003365222	35.14682421	0.000465476
38367.89279	0.996634778	4125.35721	0.155387857
2411770.287	0.948368602	295341.2645	0.071389344
31481.17733	0.012379189	3911.460413	0.001760912
99821.22088	0.039252209	11611.44158	0
288186.7344	0.982047008	39636.77121	0.021180654
76.99460984	0.000262373	19.57580081	6.66735E-05
5191.403067	0.017690619	589.4844137	0
1056809.883	0.977144102	143530.9765	0.077504771
8886.026443	0.008216169	1087.967107	0.000378069
15833.29524	0.01463973	2637.656968	0
82839.14301	0.472959041	41018.74623	0.027854534
92311.63309	0.527040959	40988.11418	0.285709704
7218.050914	0.190725187	3171.622992	0.001275183
30627.24375	0.809274813	12784.38206	0.060670908
24221.56084	1	10512.78675	0.032038301
638933.1698	0.950887636	94132.86569	0.049270857
22813.76668	0.033952422	3104.296575	0.001279513
10186.47113	0.015159941	1664.070681	0
4485.01735	0.644084259	60.35995265	0.001907807
2478.38424	0.355915741	35.18272892	0.014284197
8209.146786	0.111203515	3808.263764	0.002623393
65611.78219	0.888796485	11943.61987	0.133547837
1568.114521	0.292668852	857.7092994	0.000817482
3789.867751	0.707331148	542.4381557	0.008216862
794.3722308	0.140359342	81.97117746	0.000628162
4865.188593	0.859640658	1790.53435	0.035972567
3043.010328	0.445927985	127.0076639	0.000641491
3689.093058	0.540606063	167.7372909	0.002757581
0.105475841	1.54566E-05	0.017321658	0
91.78611068	0.013450495	3.135649279	5.12969E-05

NOx_IDLEX	NOx_STREX	NOx_TOTEX	PM2.5_RUNEX	PM2.5_IDLEX
0	8.55408E-08	0.000465562	8.01115E-08	0
0.027016622	0.014828237	0.197232715	0.001065278	1.94587E-05
0	0.050320413	0.121709757	0.003087062	0
0	0	0.001760912	0.000143354	0
0	0	0	0	0
0	0.011224856	0.032405509	0.000457968	0
0	0	6.66735E-05	6.23795E-06	0
0	0	0	0	0
0	0.04676927	0.12427404	0.001464813	0
0	0	0.000378069	4.29395E-05	0
0	0	0	0	0
0.000110148	0.023442304	0.051406986	0.000238801	0
0.008108314	0	0.293818018	0.003278945	9.3672E-05
8.02086E-06	0.001665889	0.002949092	1.56115E-05	0
0.002429286	0	0.063100194	0.00093756	2.92111E-05
0	0.003235559	0.03527386	5.13826E-05	0
0	0.034524152	0.083795009	0.000880675	0
0	0	0.001279513	0.000112124	0
0	0	0	0	0
0	2.6259E-05	0.001934066	6.87394E-06	0
0	0	0.014284197	0.000346989	0
1.86629E-05	0.001505061	0.004147116	1.18924E-05	0
0.014451697	0.028661463	0.176660997	0.000667998	7.88641E-06
3.0743E-06	0.000314581	0.001135137	2.08877E-06	0
0.0007154	0.00131946	0.010251722	4.88472E-05	2.3137E-07
2.08575E-05	5.03818E-05	0.000699401	1.36973E-06	0
0.007234942	0.001941754	0.045149263	0.000214555	7.28678E-06
0	9.23836E-05	0.000733875	7.15863E-06	0
0	0	0.002757581	2.49147E-05	0
0	0	0	0	0
0	0	5.12969E-05	3.33036E-07	0

PM2.5_STREX	PM2.5_TOTEX	PM2.5_PMTW	PM2.5_PMBW	PM2.5_TOTAL
5.01432E-09	8.51258E-08	7.14036E-07	3.77868E-06	4.57784E-06
0	0.001084737	0.000364619	0.001071981	0.002521337
0.000491618	0.00357868	0.005317043	0.041871716	0.05076744
0	0.000143354	6.94041E-05	0.000546557	0.000759316
0	0	0.000220068	0.001733036	0.001953105
8.91878E-05	0.000547155	0.000635343	0.005003326	0.006185824
0	6.23795E-06	1.69744E-07	1.33673E-06	7.74442E-06
0	0	1.14451E-05	9.013E-05	0.000101575
0.000261928	0.001726741	0.002329867	0.018347702	0.02240431
0	4.29395E-05	1.95903E-05	0.000154274	0.000216804
0	0	3.49064E-05	0.000274888	0.000309795
2.18204E-05	0.000260621	0.000182629	0.002991464	0.003434714
0	0.003372617	0.000305268	0.003333532	0.007011417
1.09753E-06	1.67091E-05	1.59131E-05	0.000304099	0.000336721
0	0.000966771	0.000101282	0.001290336	0.002358389
3.12883E-05	8.26709E-05	2.66997E-05	0.000134566	0.000243937
0.000181822	0.001062498	0.001408607	0.011092776	0.013563881
0	0.000112124	5.02957E-05	0.000396079	0.000558499
0	0	2.24573E-05	0.000176851	0.000199309
1.9143E-08	6.89308E-06	1.48317E-05	0.000276165	0.00029789
0	0.000346989	1.09278E-05	0.000152607	0.000510523
1.78898E-06	1.36814E-05	2.71471E-05	0.000505479	0.000546308
0	0.000675884	0.000216974	0.004040053	0.00493291
2.63776E-07	2.35254E-06	5.18565E-06	9.65568E-05	0.000104095
0	4.90786E-05	1.25328E-05	0.000233362	0.000294973
5.89578E-08	1.42869E-06	1.75129E-06	0.000279506	0.000282686
0	0.000221841	1.60889E-05	0.001711854	0.001949785
1.02787E-07	7.26142E-06	8.80795E-06	0.000165234	0.000181303
0	2.49147E-05	2.80449E-05	0.000142894	0.000195854
0	0	1.04641E-09	3.07643E-09	4.12284E-09
0	3.33036E-07	9.10592E-07	2.67714E-06	3.92077E-06

PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW
8.71286E-08	0	5.45353E-09	9.25821E-08	2.85614E-06
0.001113445	2.03385E-05	0	0.001133784	0.001458477
0.003357461	0	0.00053468	0.003892141	0.021268173
0.000149836	0	0	0.000149836	0.000277616
0	0	0	0	0.000880272
0.000498081	0	9.69999E-05	0.000595081	0.002541372
6.52E-06	0	0	6.52E-06	6.78976E-07
0	0	0	0	4.57803E-05
0.001593118	0	0.000284871	0.001877988	0.009319468
4.48811E-05	0	0	4.48811E-05	7.83613E-05
0	0	0	0	0.000139626
0.000259718	0	2.37316E-05	0.00028345	0.000730516
0.003427205	9.79075E-05	0	0.003525112	0.001221074
1.6979E-05	0	1.19366E-06	1.81726E-05	6.36523E-05
0.000979952	3.05319E-05	0	0.001010484	0.000405129
5.49181E-05	0	3.32169E-05	8.8135E-05	0.000106799
0.000957815	0	0.000197748	0.001155563	0.005634426
0.000117194	0	0	0.000117194	0.000201183
0	0	0	0	8.98293E-05
7.47603E-06	0	2.08197E-08	7.49685E-06	5.93266E-05
0.000362678	0	0	0.000362678	4.37112E-05
1.29341E-05	0	1.94568E-06	1.48797E-05	0.000108588
0.000698201	8.24299E-06	0	0.000706444	0.000867895
2.27172E-06	0	2.8688E-07	2.5586E-06	2.07426E-05
5.10558E-05	2.41831E-07	0	5.12977E-05	5.01314E-05
1.48971E-06	0	6.4122E-08	1.55383E-06	7.00516E-06
0.000224256	7.61625E-06	0	0.000231872	6.43554E-05
7.78566E-06	0	1.1179E-07	7.89745E-06	3.52318E-05
2.60413E-05	0	0	2.60413E-05	0.00011218
0	0	0	0	4.18562E-09
3.48095E-07	0	0	3.48095E-07	3.64237E-06

PM10_PMBW	PM10_TOTAL	CO2_RUNEX	CO2_IDLEX	CO2_STREX
8.81691E-06	1.17656E-05	0.29336381	0	0.001747339
0.002501289	0.00509355	64.25192259	4.610051456	0
0.097700671	0.122860986	612.7937867	0	15.68101401
0.001275301	0.001702753	6.384300422	0	0
0.004043752	0.004924024	0	0	0
0.011674428	0.014810881	89.35283755	0	2.655737798
3.11905E-06	1.0318E-05	0.035779514	0	0
0.000210303	0.000256084	0	0	0
0.042811306	0.054008762	349.1616986	0	10.46485473
0.000359972	0.000483215	2.458226167	0	0
0.000641406	0.000781032	0	0	0
0.006980082	0.007994048	88.75363524	0.360090351	0.862797603
0.007778241	0.012524427	56.34382886	0.489864807	0
0.000709564	0.000791389	8.604790523	0.031310446	0.072428193
0.003010784	0.004426397	20.70806572	0.242639262	0
0.000313988	0.000508922	5.767022251	0	0.749966092
0.025883145	0.032673134	254.0109559	0	8.405772789
0.000924184	0.001242561	8.584036853	0	0
0.000412653	0.000502483	0	0	0
0.000644386	0.000711209	8.683564004	0	0.001709018
0.000356082	0.000762472	2.830651344	0	0
0.001179451	0.001302919	14.63454308	0.105992689	0.153309609
0.00942679	0.011001129	70.24539182	2.315689111	0
0.000225299	0.0002486	2.840291838	0.017076815	0.025120502
0.00054451	0.000645939	4.754726133	0.150116137	0
0.000652181	0.00066074	0.714298709	0.055159569	0.004549584
0.003994327	0.004290554	5.877503593	0.613190156	0
0.000385546	0.000428675	5.428850231	0	0.009684715
0.00033342	0.000471641	5.422650216	0	0
7.17834E-09	1.1364E-08	0	0	0
6.24666E-06	1.02371E-05	0.210287034	0	0

CO2_TOTEX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	CH4_TOTEX
0.295111149	1.10316E-05	0	3.60185E-09	1.10352E-05
68.86197405	8.20829E-05	9.0789E-05	0	0.000172872
628.4748007	0.004014786	0	0.013264142	0.017278928
6.384300422	1.70935E-05	0	0	1.70935E-05
0	0	0	0	0
92.00857535	0.001117638	0	0.003039063	0.004156701
0.035779514	4.04602E-07	0	0	4.04602E-07
0	0	0	0	0
359.6265533	0.003640963	0	0.011326446	0.014967409
2.458226167	6.91007E-06	0	0	6.91007E-06
0	0	0	0	0
89.97652319	0.001307189	0.000337876	0.001194532	0.002839597
56.83369367	0.000928875	1.8312E-05	0	0.000947187
8.708529162	4.44174E-05	2.60825E-05	7.28619E-05	0.000143362
20.95070499	0.000263819	5.7116E-06	0	0.00026953
6.516988343	0.009400695	0	0.003216565	0.01261726
262.4167287	0.002354826	0	0.008357082	0.010711908
8.584036853	1.34395E-05	0	0	1.34395E-05
0	0	0	0	0
8.685273022	5.90097E-05	0	2.18316E-06	6.11928E-05
2.830651344	1.82604E-05	0	0	1.82604E-05
14.89384538	7.45235E-05	5.56866E-05	0.000152877	0.000283087
72.56108093	5.3548E-05	9.37678E-06	0	6.29248E-05
2.882489156	2.3338E-05	9.03994E-06	3.00356E-05	6.24135E-05
4.90484227	2.60993E-06	2.36432E-06	0	4.97425E-06
0.774007862	1.60148E-05	5.34582E-05	6.04102E-06	7.55141E-05
6.490693749	2.41759E-05	2.03632E-06	0	2.62122E-05
5.438534946	1.71383E-05	0	1.24803E-05	2.96185E-05
5.422650216	0.000257781	0	0	0.000257781
0	0	0	0	0
0.210287034	0.000679304	0	0	0.000679304

N2O_RUNEX	N2O_IDLEX	N2O_STREX	N2O_TOTEX	ROG_RUNEX
1.98697E-05	0	4.14593E-09	1.98738E-05	4.93543E-05
0.010099507	0.000724636	0	0.010824143	0.001767223
0.009698741	0	0.007388427	0.017087167	0.014362523
0.001003523	0	0	0.001003523	0.000368013
0	0	0	0	0
0.001865581	0	0.001222406	0.003087987	0.004861854
5.62404E-06	0	0	5.62404E-06	8.71085E-06
0	0	0	0	0
0.006674181	0	0.004951202	0.011625383	0.014990551
0.000386399	0	0	0.000386399	0.00014877
0	0	0	0	0
0.001533014	8.54948E-06	0.001729356	0.003270919	0.006577863
0.008856465	7.69999E-05	0	0.008933465	0.019998122
8.63961E-05	6.77424E-07	0.00013245	0.000219523	0.000194069
0.00325502	3.81395E-05	0	0.003293159	0.005679858
0.001803394	0	0.000178525	0.001981918	0.065845484
0.004213426	0	0.003370531	0.007583957	0.009912438
0.001349291	0	0	0.001349291	0.000289345
0	0	0	0	0
0.000122537	0	2.75176E-06	0.000125288	0.000245939
0.000444939	0	0	0.000444939	0.000393135
0.000143527	1.62041E-06	0.000120732	0.000265879	0.000354795
0.011041597	0.000363994	0	0.011405591	0.001152873
3.96042E-05	2.46634E-07	2.33895E-05	6.32403E-05	0.00011478
0.000747377	2.35962E-05	0	0.000770973	5.61911E-05
2.97373E-05	1.91607E-06	4.46041E-06	3.61138E-05	8.09458E-05
0.000923862	9.6385E-05	0	0.001020247	0.0005205
6.02957E-05	0	8.88599E-06	6.91817E-05	5.47321E-05
0.000852365	0	0	0.000852365	5.78627E-05
0	0	0	0	0
4.28684E-05	0	0	4.28684E-05	9.70592E-06

ROG_IDLEX	ROG_STREX	ROG_TOTEX	ROG_DIURN	ROG_HTSK
0	1.87665E-08	4.93731E-05	6.66395E-08	2.7141E-06
0.001954662	0	0.003721885	0	0
0	0.057023077	0.0713856	0.011212344	0.026032708
0	0	0.000368013	0	0
0	0	0	5.1532E-05	6.25639E-05
0	0.015775828	0.020637681	0.005234521	0.009876228
0	0	8.71085E-06	0	0
0	0	0	2.60489E-06	3.17622E-06
0	0.055661658	0.070652209	0.013804095	0.027104142
0	0	0.00014877	0	0
0	0	0	1.1726E-05	1.4212E-05
0.001259078	0.006352506	0.014189447	0.000222993	0.008983206
0.000394246	0	0.020392369	0	0
9.20061E-05	0.000360708	0.000646783	8.7407E-06	0.000374071
0.000122967	0	0.005802825	0	0
0	0.025367676	0.09121316	0.013441535	0.010662992
0	0.043244854	0.053157292	0.010655173	0.019841591
0	0	0.000289345	0	0
0	0	0	7.32886E-06	8.96622E-06
0	8.89175E-06	0.000254831	6.86787E-05	5.7826E-06
0	0	0.000393135	0	0
0.000213938	0.000817813	0.001386545	6.32788E-06	0.000331047
0.00020188	0	0.001354753	0	0
3.5264E-05	0.000166164	0.000316208	2.27924E-06	3.58813E-05
5.09031E-05	0	0.000107094	0	0
0.00023933	3.60166E-05	0.000356292	8.83036E-07	8.53669E-06
4.38413E-05	0	0.000564341	0	0
0	5.17101E-05	0.000106442	4.03411E-07	4.03301E-06
0	0	5.78627E-05	0	0
0	0	0	0	0
0	0	9.70592E-06	0	0

ROG_RUNLS	ROG_RESTL	ROG_TOTAL	TOG_RUNEX	TOG_IDLEX
1.44354E-05	3.39399E-08	6.66232E-05	7.20177E-05	0
0	0	0.003721885	0.002011849	0.002225234
0.064124509	0.007707926	0.180463087	0.020957759	0
0	0	0.000368013	0.000418958	0
0	1.32188E-05	0.000127315	0	0
0.036838275	0.003271033	0.075857738	0.007094405	0
0	0	8.71085E-06	9.91672E-06	0
0	6.68735E-07	6.44985E-06	0	0
0.097517982	0.009973181	0.21905161	0.021874177	0
0	0	0.00014877	0.000169364	0
0	3.00972E-06	2.89477E-05	0	0
0.084384895	8.77714E-05	0.107868312	0.009598402	0.001837243
0	0	0.020392369	0.022766533	0.000448823
0.002514177	3.93332E-06	0.003547704	0.000283184	0.000134255
0	0	0.005802825	0.006466141	0.00013999
0.024200101	0.006114987	0.145632775	0.080755926	0
0.067411139	0.007888098	0.158953293	0.014464206	0
0	0	0.000289345	0.000329401	0
0	1.88119E-06	1.81763E-05	0	0
0.000120879	2.07171E-05	0.000470889	0.000358874	0
0	0	0.000393135	0.000447558	0
0.001857071	2.7854E-06	0.003583777	0.000517716	0.000312178
0	0	0.001354753	0.001312459	0.000229825
0.000407604	7.86317E-07	0.00076276	0.000167487	5.14572E-05
0	0	0.000107094	6.39693E-05	5.79493E-05
5.42115E-05	2.83097E-07	0.000420207	0.000118116	0.00034923
0	0	0.000564341	0.000592549	4.991E-05
2.17371E-05	1.80283E-07	0.000132796	7.98649E-05	0
0	0	5.78627E-05	0.000322235	0
0	0	0	0	0
0	0	9.70592E-06	0.00069328	0

TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HTSK	TOG_RUNLS
2.0547E-08	7.20382E-05	6.66395E-08	2.7141E-06	1.44354E-05
0	0.004237083	0	0	0
0.062433092	0.083390851	0.011212344	0.026032708	0.064124509
0	0.000418958	0	0	0
0	0	5.1532E-05	6.25639E-05	0
0.017272546	0.024366951	0.005234521	0.009876228	0.036838275
0	9.91672E-06	0	0	0
0	0	2.60489E-06	3.17622E-06	0
0.060942509	0.082816686	0.013804095	0.027104142	0.097517982
0	0.000169364	0	0	0
0	0	1.1726E-05	1.4212E-05	0
0.006955195	0.01839084	0.000222993	0.008983206	0.084384895
0	0.023215356	0	0	0
0.00039493	0.000812369	8.7407E-06	0.000374071	0.002514177
0	0.006606131	0	0	0
0.027594099	0.108350025	0.013441535	0.010662992	0.024200101
0.047347672	0.061811877	0.010655173	0.019841591	0.067411139
0	0.000329401	0	0	0
0	0	7.32886E-06	8.96622E-06	0
9.73534E-06	0.000368609	6.86787E-05	5.7826E-06	0.000120879
0	0.000447558	0	0	0
0.000895402	0.001725295	6.32788E-06	0.000331047	0.001857071
0	0.001542283	0	0	0
0.000181929	0.000400873	2.27924E-06	3.58813E-05	0.000407604
0	0.000121919	0	0	0
3.94336E-05	0.000506779	8.83036E-07	8.53669E-06	5.42115E-05
0	0.00064246	0	0	0
5.6616E-05	0.000136481	4.03411E-07	4.03301E-06	2.17371E-05
0	0.000322235	0	0	0
0	0	0	0	0
0	0.00069328	0	0	0

TOG_RESTL	TOG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX
3.39399E-08	8.92883E-05	0.004556948	0	0.000144472
0	0.004237083	0.01216272	0.027756546	0
0.007707926	0.192468338	1.408956498	0	0.687855806
0	0.000418958	0.007105165	0	0
1.32188E-05	0.000127315	0	0	0
0.003271033	0.079587008	0.278791044	0	0.104104523
0	9.91672E-06	6.73006E-05	0	0
6.68735E-07	6.44985E-06	0	0	0
0.009973181	0.231216087	0.948379146	0	0.465100657
0	0.000169364	0.001510724	0	0
3.00972E-06	2.89477E-05	0	0	0
8.77714E-05	0.112069705	0.139843158	0.01132258	0.093408356
0	0.023215356	0.097923179	0.003267718	0
3.93332E-06	0.003713291	0.004100887	0.000884284	0.00580003
0	0.006606131	0.02824484	0.001019216	0
0.006114987	0.16276964	0.555689023	0	0.113868122
0.007888098	0.167607879	0.578447279	0	0.336824492
0	0.000329401	0.005811609	0	0
1.88119E-06	1.81763E-05	0	0	0
2.07171E-05	0.000584667	0.005900391	0	0.000189999
0	0.000447558	0.001440649	0	0
2.7854E-06	0.003922527	0.007804861	0.003188518	0.018558566
0	0.001542283	0.009296372	0.007736995	0
7.86317E-07	0.000847424	0.002513903	0.00027287	0.003710212
0	0.000121919	0.00062328	0.000820289	0
2.83097E-07	0.000570694	0.001794281	0.001851364	0.000975077
0	0.00064246	0.001474034	0.001119437	0
1.80283E-07	0.000162835	0.000916693	0	0.000974907
0	0.000322235	0.000649983	0	0
0	0	0	0	0
0	0.00069328	0.005303236	0	0

CO_TOTEX	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX
0.00470142	2.90307E-06	0	1.72913E-08	2.92036E-06
0.039919266	0.00060702	4.35535E-05	0	0.000650574
2.096812304	0.006064091	0	0.000155176	0.006219268
0.007105165	6.03546E-05	0	0	6.03546E-05
0	0	0	0	0
0.382895567	0.000884219	0	2.62807E-05	0.000910499
6.73006E-05	3.38245E-07	0	0	3.38245E-07
0	0	0	0	0
1.413479802	0.003455238	0	0.000103558	0.003558796
0.001510724	2.32391E-05	0	0	2.32391E-05
0	0	0	0	0
0.244574094	0.000878289	3.56339E-06	8.53808E-06	0.000890391
0.101190898	0.000532652	4.63098E-06	0	0.000537283
0.010785201	8.51514E-05	3.09842E-07	7.16736E-07	8.6178E-05
0.029264057	0.000195766	2.29381E-06	0	0.00019806
0.669557144	5.70694E-05	0	7.42152E-06	6.44909E-05
0.915271771	0.002513644	0	8.31819E-05	0.002596826
0.005811609	8.115E-05	0	0	8.115E-05
0	0	0	0	0
0.00609039	8.59309E-05	0	1.69121E-08	8.59478E-05
0.001440649	2.67598E-05	0	0	2.67598E-05
0.029551945	0.000144821	1.04888E-06	1.51712E-06	0.000147387
0.017033367	0.000663644	2.18775E-05	0	0.000685521
0.006496985	2.8107E-05	1.68989E-07	2.48588E-07	2.85246E-05
0.001443568	4.49203E-05	1.41822E-06	0	4.63385E-05
0.004620721	7.06856E-06	5.45849E-07	4.50218E-08	7.65944E-06
0.002593471	5.55277E-05	5.79312E-06	0	6.13209E-05
0.0018916	5.37229E-05	0	9.58381E-08	5.38187E-05
0.000649983	5.12635E-05	0	0	5.12635E-05
0	0	0	0	0
0.005303236	0	0	0	0

Fuel Consumption
0.031149927
6.137187809
66.33752797
0.568988201
0
9.711799794
0.003188779
0
37.95973444
0.219084566
0
9.497310182
5.065191011
0.919213143
1.867190318
0.687888991
27.69892613
0.765035378
0
0.916758383
0.252276226
1.572093079
6.466863424
0.304255962
0.437134407
0.081699009
0.578470297
0.574054781
0.48328302
0
0.024305974

Welcome to the Road Construction Emissions Model, Version 9.0.0

User Instructions

This spreadsheet system contains the following individual worksheets:

1 This worksheet of User Instructions
2 Updates
3 Emission Estimates
4 Data Entry
5 Non-default Off-road Equipment
6 EMFAC2017
7 On-road Mitigation EF
8 OFFROAD Convert
9 Off-road Tier 4 EF
10 OFFROAD HP & LF
11 OFFROAD EF
12 x-ref

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and tons) by project phase and tons over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.

The last seven of these worksheets - EMFAC2017, On-road Mitigation EF, OFFROAD Convert, Off-road Tier 4 EF, OFFROAD HP & LP, OFFROAD EF and x-ref - cannot be modified by the user. They are protected worksheets.

Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticipate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet. This spreadsheet was prepared by Jones & Stokes, TIAX LLC and Ramboll Environ with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

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John Grant

Road Construction Emissions Model, Version 9.0.0

Updates Log

Changes from previous version of Road Construction Emissions Model

(Version 8.1.0 to 9.0.0) (updated by SMAQMD 04/22/18 with assistance from Ramboll)

1) Project length changed to include calendar years 2014 through 2040.
2) On-road vehicle emission factors have been updated to EMFAC2017 version 1.0.2.
3) Off-road emission rates updated to include calendar years 2014 through 2040.
4) Average Offroad HP by Equipment Type updated to be consistent with CalEEMod (version 2016.3.2)
5) Modified 'Data Entry' tab to calculate NOx start emissions form heavy duty trucks in "soil hauling", "asphalt hauling"

(Version 7.1.5 to 8.1.0) (updated by SMAQMD 05/09/16 with assistance from Ramboll ENVIRON US Corporatio

1) Project length changed to include calendar years 2014 through 2025.
2) Added a new project type: Type 4: Other Linear Project Type. Note that there are no default vehicle or equipment ac
3) Emissions estimates were extended to include SOx, CH4, N2O and CO2e.
4) Updated off-road equipment emission factors and default average horsepower by equipment type to be consistent v
5) On-road vehicle emission factors have been updated to EMFAC2014.
6) Revised pollutant order for consistency throughout the calculator.
7) Added flexibility for users to specify a non-default number of working days per month.
8) Modified soil hauling import and export quantity and haul truck capacity data requests to allow users to specify soil
9) Soil hauling emissions are now estimated separately for each construction phase.
10) Added a new feature to allow users to provide asphalt hauling quantities by phase in the "Data Entry" tab.
11) New component added where the user can specify construction start date and duration by phase.
12) The maximum daily emissions calculation was modified to sum emissions from overlapping construction phases.
13) Water truck activity can be specified and emissions estimated for the paving phase.
14) Mitigation options were added for on-road vehicles and off-road equipment. Emissions calculations include the eff
15) Model allows user to estimate emissions from non-default off-road equipment for all phases and for all project type equipment type for horsepower, number of equipment, load factor, hours of operation and emission factors in the "Nor
16) New table of total project emissions with units of tons/phase was added in the "Emission Estimates" tab.
17) Removed table of daily emissions in metric units from the "Emission Estimates" tab.
18) Removed unnecessary data from all tabs.

(Version 7.1.4 to 7.1.5) (updated by SMAQMD 12/11/13 with assistance from ENVIRON Corporation)

1) Grubbing and Land Clearing Phase calculation of active months in 2007, 2017, 2019 fixed.
2) Soil Hauling Emissions calculation to select override if it exists for round trips/day.
3) Worker Commute Emissions calculation of starting and hot soak emissions; drainage phase PM_{10} emission rate.
4) Water Truck Emissions calculation to select number of months for Grubbing and Land Clearing Phase; maximum a

(Version 6.3.2 to Version 7.1.0, 7.1.1, 7.1.2, 7.1.3 & 7.1.4) (updated by SMAQMD 8/2/13)

1) EMFAC2011 emission factors added (previous EMFAC versions dropped).
2) OFFROAD2011 emission factors added (and fixed error).
3) OFFROAD2007 for categories not in OFFROAD2011 (and fixed error)
4) Project length changed to include calendar years 2009 through 2025.
5) Average Offroad HP by Equipment Type calculation updated and corrected
6) Load Factor Adjustment deactivated (default load factors already incorporated in ARB's calculation of emission fact
7) Crawler Tractor equipment added to model
8) Air Compressors ROG & Default Excavators calculation on Data Entry sheet corrected.
9) Default equipment list updated
10) Corrections to Worker Commute Emissions calculations

and "water truck" section

n)

ctivities available for the Project Type 4. □

with CalEEMod (version 2013.2.2).□

hauling activity by phase.□

ects of mitigations if a mitigation option is selected by the user.
es. Non-default off-road equipment specification must be included by
n-default Off-road Equipment" tab.

ıcreage/day after 2025.

:ors)

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Fowler Lane Improvements

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.82	21.90	19.15	3.26	0.97	2.30	1.34	0.86	0.48	0.04	3,837.56	1.01	0.13	3,900.08
Grading/Excavation	1.89	19.73	19.79	3.26	0.96	2.30	1.30	0.82	0.48	0.04	4,119.61	0.97	0.14	4,184.16
Drainage/Utilities/Sub-Grade	0.86	11.01	8.03	2.75	0.45	2.30	0.86	0.38	0.48	0.02	2,047.05	0.46	0.06	2,076.78
Paving	1.03	13.99	10.68	0.53	0.53	0.00	0.45	0.45	0.00	0.03	2,826.08	0.64	0.12	2,877.35
Maximum (pounds/day)	1.89	21.90	19.79	3.26	0.97	2.30	1.34	0.86	0.48	0.04	4,119.61	1.01	0.14	4,184.16
Total (tons/construction project)	0.02	0.27	0.24	0.04	0.01	0.03	0.02	0.01	0.01	0.00	52.24	0.01	0.00	53.07

Notes:

Project Start Year ->	2022
Project Length (months) ->	2
Total Project Area (acres) ->	2
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	100	0	150	0	200	0
Grading/Excavation	100	0	150	0	800	0
Drainage/Utilities/Sub-Grade	40	0	60	0	560	0
Paving	0	100	0	150	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Fowler Lane Improvements

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.06	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.55	0.00	0.00	9.73
Grading/Excavation	0.01	0.11	0.11	0.02	0.01	0.01	0.01	0.00	0.00	0.00	22.66	0.01	0.00	20.88
Drainage/Utilities/Sub-Grade	0.00	0.06	0.04	0.02	0.00	0.01	0.00	0.00	0.00	0.00	11.26	0.00	0.00	10.36
Paving	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.77	0.00	0.00	7.18
Maximum (tons/phase)	0.01	0.11	0.11	0.02	0.01	0.01	0.01	0.00	0.00	0.00	22.66	0.01	0.00	20.88
Total (tons/construction project)	0.02	0.27	0.24	0.04	0.01	0.03	0.02	0.01	0.01	0.00	52.24	0.01	0.00	48.15

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Fowler Lane Improvements	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	1.50	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.49	miles
Total Project Area	1.79	acres
Maximum Area Disturbed/Day	0.11	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	50.00	50.00
	Grading/Excavation	20.00	50.00	50.00
	Drainage/Utilities/Sub-Grade	20.00	20.00	20.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	100.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.25	0.15		1/1/2022
Grading/Excavation	0.50	0.68		1/9/2022
Drainage/Utilities/Sub-Grade	0.50	0.45		1/25/2022
Paving	0.25	0.23		2/10/2022
Totals (Months)		2		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		5	150.00
Miles/round trip: Grading/Excavation		30.00		5	150.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		2	60.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.63	0.00	0.00	1.71
Pounds per day - Grading/Excavation	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	3.26	0.00	0.00	3.42
Pounds per day - Drainage/Utilities/Sub-Grade	0.02	0.09	0.64	0.02	0.01	0.00	237.27	0.00	0.04	248.42
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.00	0.00	1.37
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	6.20	0.00	0.00	6.49

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		5	150.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.63	0.00	0.00	1.71
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	1.63	0.00	0.00	1.71

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		20	40	800.00
No. of employees: Drainage/Utilities/Sub-Grade		14	28	560.00
No. of employees: Paving		10	20	400.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.50	0.04	0.02	0.01	0.00	146.50	0.00	0.00	147.74
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.41
Pounds per day - Grading/Excavation	0.13	2.02	0.18	0.08	0.03	0.01	585.99	0.01	0.02	590.98
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	0.00	3.22	0.00	0.00	3.25
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	1.41	0.12	0.06	0.02	0.00	410.19	0.01	0.01	413.69
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	2.26	0.00	0.00	2.28
Pounds per day - Paving	0.06	1.01	0.09	0.04	0.02	0.00	292.99	0.01	0.01	295.49
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.81
Total tons per construction project	0.00	0.02	0.00	0.00	0.00	0.00	6.69	0.00	0.00	6.74

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.11	2.30	0.01	0.48	0.00
Fugitive Dust - Grading/Excavation		0.11	2.30	0.01	0.48	0.00
Fugitive Dust - Drainage/Utilities/Subgrade		0.11	2.30	0.01	0.48	0.00

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Excavators	0.20	3.26	1.78	0.09	0.08	0.01	500.02	0.16
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Other Construction Equipment	1.13	12.06	11.45	0.60	0.55	0.02	1,795.00	0.58
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Skid Steer Loaders	0.07	1.39	0.93	0.03	0.03	0.00	200.39	0.06
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.48	3.35	0.18	0.17	0.01	602.48	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grubbing/Land Clearing	pounds per day	1.73	21.18	17.50	0.90	0.83	0.03	3,097.88	1.00
	Grubbing/Land Clearing	tons per phase	0.00	0.06	0.05	0.00	0.00	0.00	8.52	0.00

Grading/Excavation	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Excavators	0.20	3.26	1.78	0.09	0.08	0.01	500.02	0.16
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Graders	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Other Construction Equipment	0.75	8.04	7.63	0.40	0.37	0.01	1,196.66	0.39
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	4		Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.48	3.35	0.18	0.17	0.01	602.48	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grading/Excavation	pounds per day	1.70	17.49	18.02	0.83	0.76	0.03	2,940.44	0.95
	Grading/Excavation	tons per phase	0.01	0.10	0.10	0.00	0.00	0.00	16.17	0.01

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.20	3.26	1.78	0.09	0.08	0.01	500.02	0.16
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Other Construction Equipment	0.38	4.02	3.82	0.20	0.18	0.01	598.33	0.19
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Sub-Grade	pounds per day	0.74	9.51	7.27	0.38	0.35	0.01	1,399.59	0.45
Drainage/Utilities/Sub-Grade	tons per phase	0.00	0.05	0.04	0.00	0.00	0.00	7.70	0.00

Paving	Default Number of Vehicles	Override of Default Number of Vehicles	Mitigation Option: Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	Program-estimate					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1			Model Default Tier	Pavers	0.21	2.88	2.10	0.10	0.09	0.00	455.26	0.15
3.00	1			Model Default Tier	Paving Equipment	0.53	7.64	5.21	0.25	0.23	0.01	1,183.41	0.38
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3			Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	pounds per day	0.91	12.76	8.99	0.44	0.41	0.02	1,939.90	0.63
Paving	tons per phase	0.00	0.04	0.02	0.00	0.00	0.00	5.33	0.00
Total Emissions all Phases (tons per construction period) =>		0.02	0.24	0.21	0.01	0.01	0.00	37.72	0.01

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	505.41
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,814.38
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	202.55
0.00	0.00
0.00	0.00
0.01	608.96
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.03	3,131.30
0.00	8.61

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	505.41
0.00	0.00
0.00	0.00
0.01	648.19
0.00	0.00
0.00	0.00
0.01	1,209.59
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.96
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.03	2,972.14
0.00	16.35

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	505.41
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	604.79
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	1,414.68
0.00	7.78

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.17
0.01	1,196.18
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,960.82
0.00	5.39
0.00	38.13

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	-	-	-	-	1.2220	-	-	-	-	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	0.0178	0.0178	0.0178	0.0178	1.0001	1.0001	1.0001	1.0001	1.0001	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0178	0.0178	0.0178	0.0178		1.0001	1.0001	1.0001	1.0001	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	-	-	-	-	1.2976	-	-	-	-	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	0.1785	0.1785	0.1785	0.1785	0.6644	0.6644	0.6644	0.6644	0.6644	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.1785	0.1785	0.1785	0.1785		0.6644	0.6644	0.6644	0.6644	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	-	-	-	-	0.5158	-	-	-	-	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	0.0051	0.0051	0.0051	0.0051	0.5106	0.5106	0.5106	0.5106	0.5106	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0051	0.0051	0.0051	0.0051		0.5106	0.5106	0.5106	0.5106	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	-	-	-	-	0.4199	-	-	-	-	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	0.0402	0.0402	0.0402	0.0402	0.4233	0.4233	0.4233	0.4233	0.4233	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0402	0.0402	0.0402	0.0402		0.4233	0.4233	0.4233	0.4233	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	-	-	-	-	3.1768	-	-	-	-	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	0.1047	0.1047	0.1047	0.1047	3.1760	3.1760	3.1760	3.1760	3.1760	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1047	0.1047	0.1047	0.1047		3.1760	3.1760	3.1760	3.1760	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	-	-	-	-	0.0416	-	-	-	-
15	-	-	-	-	0.0333	-	-	-	-
16	1.6266	1.6266	1.6266	1.6266	0.0302	0.0302	0.0302	0.0302	0.0302
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.6266	1.6266	1.6266	1.6266		0.0302	0.0302	0.0302	0.0302

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)				
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5
0	11	0.30	6.00	5.32	0.30	0.28
11	25	0.30	4.90	5.32	0.30	0.28
25	50	0.19	4.10	3.33	0.02	0.02
50	75	0.19	3.70	3.33	0.02	0.02
75	100	0.15	3.70	0.30	0.02	0.01
100	175	0.15	3.70	0.30	0.02	0.01
175	300	0.15	2.60	0.30	0.02	0.01
300	600	0.15	2.60	0.30	0.02	0.01
600	750	0.15	2.60	0.30	0.02	0.01
750	1200	0.15	2.60	2.60	0.03	0.03
1200	9999	0.15	2.60	2.60	0.03	0.03

92
95
1.07

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

ıes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.005	0.259	0.238	471.990	0.153	0.004
0.005	0.141	0.129	469.558	0.152	0.004
0.005	0.069	0.063	476.185	0.154	0.004
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.169	0.155	470.000	0.152	0.004
0.005	0.080	0.074	471.850	0.153	0.004
0.005	0.051	0.047	473.223	0.153	0.004
0.005	0.043	0.040	472.929	0.153	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

0.061	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.054	0.005
0.062	0.005
0.039	0.005
0.021	0.004
0.016	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.015	0.004
0.160	0.005
0.152	0.004
0.155	0.004
0.153	0.004
0.152	0.004
0.022	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005
0.154	0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005
0.153	0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
0.171	0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006
0.153	0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005
0.152	0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005
0.154	0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005
0.170	0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
0.152	0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
0.153	0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
0.153	0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
0.153	0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

0.153	0.004		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005
0.153	0.004		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005
0.169	0.005		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005
0.153	0.004		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005
0.153	0.004		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005
0.153	0.004		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005
0.152	0.004		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005
0.153	0.004		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005
0.170	0.005		Pavers	25	0.918	4.945	4.131	0.005
0.170	0.005		Pavers	50	0.918	4.945	4.131	0.005
0.152	0.004		Pavers	120	0.314	3.493	3.068	0.005
0.153	0.004		Pavers	175	0.181	3.007	1.644	0.005
0.153	0.004		Pavers	250	0.107	1.004	1.035	0.005
0.151	0.004		Pavers	500	0.115	0.969	1.134	0.005
0.169	0.005		Paving Equipment	25	0.476	4.203	3.627	0.005
0.169	0.005		Paving Equipment	50	0.476	4.203	3.627	0.005
0.153	0.004		Paving Equipment	120	0.242	3.483	2.496	0.005
0.152	0.004		Paving Equipment	175	0.175	3.038	1.509	0.005
0.153	0.004		Paving Equipment	250	0.133	1.117	1.110	0.005
0.059	0.005		Plate Compactors	15	0.661	3.469	4.142	0.008
0.054	0.005		Pressure Washers	15	0.607	3.491	4.269	0.008
0.062	0.005		Pressure Washers	25	0.694	2.376	4.407	0.007
0.027	0.005		Pressure Washers	50	0.306	3.210	3.344	0.007
0.017	0.004		Pressure Washers	120	0.189	3.186	2.100	0.006
0.016	0.004		Pressure Washers	175	0.178	2.907	1.310	0.006

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

0.152	0.004
0.152	0.004
0.150	0.004
0.153	0.004
0.156	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.019	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.173	0.005
0.154	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.166	0.005

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
Scrapers	120	0.566	4.094	5.503	0.005
Scrapers	175	0.290	3.321	2.631	0.005
Scrapers	250	0.291	1.602	2.803	0.005
Scrapers	500	0.216	1.732	2.051	0.005
Scrapers	750	0.184	1.338	1.713	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.522	4.217	3.561	0.007
Signal Boards	120	0.278	3.470	2.179	0.006
Signal Boards	175	0.215	3.049	1.262	0.006
Signal Boards	250	0.213	1.257	1.192	0.007
Skid Steer Loaders	25	0.341	3.660	3.309	0.006
Skid Steer Loaders	50	0.341	3.660	3.309	0.006
Skid Steer Loaders	120	0.140	3.252	1.867	0.005
Surfacing Equipment	50	0.235	3.537	3.576	0.006
Surfacing Equipment	120	0.232	3.385	2.659	0.005
Surfacing Equipment	175	0.187	2.926	1.999	0.005
Surfacing Equipment	250	0.148	1.143	1.747	0.005
Surfacing Equipment	500	0.128	1.169	1.327	0.005
Surfacing Equipment	750	0.085	0.978	0.768	0.005
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

2028

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.683	3.491	4.278	0.008	0.183
Pumps	25	0.709	2.376	4.407	0.007	0.177
Pumps	50	0.485	3.943	3.528	0.007	0.099
Pumps	120	0.261	3.389	2.213	0.006	0.092
Pumps	175	0.199	2.974	1.318	0.006	0.056
Pumps	250	0.159	1.016	1.038	0.006	0.029
Pumps	500	0.156	0.992	0.958	0.005	0.028
Pumps	750	0.157	0.992	0.977	0.005	0.029
Pumps	9999	0.186	1.020	2.840	0.005	0.049
Rollers	15	0.569	4.125	3.689	0.005	0.167
Rollers	25	0.569	4.125	3.689	0.005	0.167
Rollers	50	0.569	4.125	3.689	0.005	0.167
Rollers	120	0.255	3.444	2.691	0.005	0.135
Rollers	175	0.127	2.909	1.101	0.005	0.049
Rollers	250	0.173	1.215	1.783	0.005	0.066
Rollers	500	0.212	1.968	2.200	0.005	0.091
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

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0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.030	0.030	568.299	0.038	0.005
0.006	0.027	0.027	568.300	0.020	0.004
0.006	0.019	0.019	568.299	0.014	0.004
0.005	0.014	0.014	568.300	0.013	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.048	0.048	568.299	0.054	0.005
0.006	0.043	0.043	568.299	0.027	0.004
0.006	0.028	0.028	568.299	0.020	0.004
0.006	0.018	0.018	568.299	0.018	0.004
0.005	0.018	0.018	568.299	0.018	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004
0.017	0.004
0.049	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.061	0.005
0.062	0.005
0.030	0.004
0.022	0.004
0.019	0.004
0.019	0.004
0.061	0.005
0.059	0.005
0.029	0.004
0.021	0.004
0.019	0.004
0.059	0.005
0.053	0.005
0.061	0.005
0.016	0.005
0.010	0.004
0.009	0.004

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
Pavers	25	0.685	2.339	4.332	0.007
Pavers	50	0.694	5.260	3.555	0.007
Pavers	120	0.338	3.774	1.986	0.006
Pavers	175	0.244	3.319	0.889	0.006
Pavers	250	0.221	1.157	0.772	0.006
Pavers	500	0.218	1.111	0.722	0.005
Paving Equipment	25	0.685	2.339	4.332	0.007
Paving Equipment	50	0.664	5.181	3.511	0.007
Paving Equipment	120	0.326	3.753	1.928	0.006
Paving Equipment	175	0.235	3.303	0.832	0.006
Paving Equipment	250	0.212	1.140	0.714	0.006
Plate Compactors	15	0.661	3.470	4.142	0.008
Pressure Washers	15	0.589	3.470	4.143	0.008
Pressure Washers	25	0.685	2.340	4.332	0.007
Pressure Washers	50	0.188	3.101	2.882	0.007
Pressure Washers	120	0.116	3.161	1.421	0.006
Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.059	0.005
0.032	0.005
0.017	0.004
0.012	0.004
0.014	0.004
0.061	0.005
0.037	0.005
0.019	0.004
0.039	0.005
0.020	0.004
0.014	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.045	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.061	0.005

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
Scrapers	120	0.348	3.842	1.943	0.006
Scrapers	175	0.250	3.382	0.824	0.006
Scrapers	250	0.229	1.175	0.717	0.006
Scrapers	500	0.226	1.123	0.674	0.005
Scrapers	750	0.226	1.123	0.682	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.356	4.067	3.082	0.007
Signal Boards	120	0.192	3.445	1.482	0.006
Signal Boards	175	0.138	3.048	0.372	0.006
Signal Boards	250	0.162	1.254	0.401	0.007
Skid Steer Loaders	25	0.685	2.339	4.332	0.007
Skid Steer Loaders	50	0.411	4.390	3.097	0.007
Skid Steer Loaders	120	0.211	3.540	1.442	0.006
Surfacing Equipment	50	0.439	4.221	3.193	0.007
Surfacing Equipment	120	0.226	3.482	1.659	0.006
Surfacing Equipment	175	0.162	3.072	0.567	0.006
Surfacing Equipment	250	0.149	1.050	0.497	0.006
Surfacing Equipment	500	0.148	1.018	0.471	0.005
Surfacing Equipment	750	0.148	1.018	0.477	0.005
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
0.296	0.006	0.011	0.011	568.299	0.011	0.004
0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
1.435	0.006	0.013	0.013	568.300	0.019	0.004
3.114	0.007	0.025	0.025	568.299	0.035	0.005
1.521	0.006	0.024	0.024	568.299	0.018	0.004
0.397	0.006	0.017	0.017	568.299	0.013	0.004
0.370	0.006	0.013	0.013	568.299	0.012	0.004
0.358	0.005	0.012	0.012	568.299	0.012	0.004
0.361	0.005	0.013	0.013	568.299	0.012	0.004
4.142	0.008	0.161	0.161	568.300	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.203	0.007	0.016	0.016	568.300	0.045	0.005
1.469	0.006	0.015	0.015	568.299	0.022	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgrc
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgrc

ound/gwp.htm
ound/gwp.htm

Welcome to the Road Construction Emissions Model, Version 9.0.0

User Instructions

This spreadsheet system contains the following individual worksheets:

1 This worksheet of User Instructions
2 Updates
3 Emission Estimates
4 Data Entry
5 Non-default Off-road Equipment
6 EMFAC2017
7 On-road Mitigation EF
8 OFFROAD Convert
9 Off-road Tier 4 EF
10 OFFROAD HP & LF
11 OFFROAD EF
12 x-ref

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and tons) by project phase and tons over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.

The last seven of these worksheets - EMFAC2017, On-road Mitigation EF, OFFROAD Convert, Off-road Tier 4 EF, OFFROAD HP & LP, OFFROAD EF and x-ref - cannot be modified by the user. They are protected worksheets.

Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticipate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet. This spreadsheet was prepared by Jones & Stokes, TIAX LLC and Ramboll Environ with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

http://www.airquality.org
Karen Huss

http://www.ramboll.com/
John Grant

Road Construction Emissions Model, Version 9.0.0

Updates Log

Changes from previous version of Road Construction Emissions Model

(Version 8.1.0 to 9.0.0) (updated by SMAQMD 04/22/18 with assistance from Ramboll)

1) Project length changed to include calendar years 2014 through 2040.
2) On-road vehicle emission factors have been updated to EMFAC2017 version 1.0.2.
3) Off-road emission rates updated to include calendar years 2014 through 2040.
4) Average Offroad HP by Equipment Type updated to be consistent with CalEEMod (version 2016.3.2)
5) Modified 'Data Entry' tab to calculate NOx start emissions form heavy duty trucks in "soil hauling", "asphalt hauling"

(Version 7.1.5 to 8.1.0) (updated by SMAQMD 05/09/16 with assistance from Ramboll ENVIRON US Corporatio

1) Project length changed to include calendar years 2014 through 2025.
2) Added a new project type: Type 4: Other Linear Project Type. Note that there are no default vehicle or equipment ac
3) Emissions estimates were extended to include SOx, CH4, N2O and CO2e.
4) Updated off-road equipment emission factors and default average horsepower by equipment type to be consistent v
5) On-road vehicle emission factors have been updated to EMFAC2014.
6) Revised pollutant order for consistency throughout the calculator.
7) Added flexibility for users to specify a non-default number of working days per month.
8) Modified soil hauling import and export quantity and haul truck capacity data requests to allow users to specify soil
9) Soil hauling emissions are now estimated separately for each construction phase.
10) Added a new feature to allow users to provide asphalt hauling quantities by phase in the "Data Entry" tab.
11) New component added where the user can specify construction start date and duration by phase.
12) The maximum daily emissions calculation was modified to sum emissions from overlapping construction phases.
13) Water truck activity can be specified and emissions estimated for the paving phase.
14) Mitigation options were added for on-road vehicles and off-road equipment. Emissions calculations include the eff
15) Model allows user to estimate emissions from non-default off-road equipment for all phases and for all project type equipment type for horsepower, number of equipment, load factor, hours of operation and emission factors in the "Nor
16) New table of total project emissions with units of tons/phase was added in the "Emission Estimates" tab.
17) Removed table of daily emissions in metric units from the "Emission Estimates" tab.
18) Removed unnecessary data from all tabs.

(Version 7.1.4 to 7.1.5) (updated by SMAQMD 12/11/13 with assistance from ENVIRON Corporation)

1) Grubbing and Land Clearing Phase calculation of active months in 2007, 2017, 2019 fixed.
2) Soil Hauling Emissions calculation to select override if it exists for round trips/day.
3) Worker Commute Emissions calculation of starting and hot soak emissions; drainage phase PM_{10} emission rate.
4) Water Truck Emissions calculation to select number of months for Grubbing and Land Clearing Phase; maximum a

(Version 6.3.2 to Version 7.1.0, 7.1.1, 7.1.2, 7.1.3 & 7.1.4) (updated by SMAQMD 8/2/13)

1) EMFAC2011 emission factors added (previous EMFAC versions dropped).
2) OFFROAD2011 emission factors added (and fixed error).
3) OFFROAD2007 for categories not in OFFROAD2011 (and fixed error)
4) Project length changed to include calendar years 2009 through 2025.
5) Average Offroad HP by Equipment Type calculation updated and corrected
6) Load Factor Adjustment deactivated (default load factors already incorporated in ARB's calculation of emission fact
7) Crawler Tractor equipment added to model
8) Air Compressors ROG & Default Excavators calculation on Data Entry sheet corrected.
9) Default equipment list updated
10) Corrections to Worker Commute Emissions calculations

and "water truck" section

n)

ctivities available for the Project Type 4. □

with CalEEMod (version 2013.2.2).□

hauling activity by phase.□

ects of mitigations if a mitigation option is selected by the user.
es. Non-default off-road equipment specification must be included by
n-default Off-road Equipment" tab.

ıcreage/day after 2025.

:ors)

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> SR-49 Improvements (Option A)				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	2.31	21.93	22.17	11.03	1.03	10.00	3.02	0.94	2.08	0.05	5,027.79	0.69	0.22	5,110.89
Grading/Excavation	2.77	23.15	29.54	11.26	1.26	10.00	3.17	1.09	2.08	0.07	6,447.31	1.65	0.16	6,536.44
Drainage/Utilities/Sub-Grade	1.81	18.14	16.92	10.81	0.81	10.00	2.82	0.74	2.08	0.04	3,578.11	0.52	0.06	3,607.88
Paving	0.99	12.79	10.59	0.54	0.54	0.00	0.47	0.47	0.00	0.03	2,533.89	0.56	0.11	2,582.13
Maximum (pounds/day)	2.77	23.15	29.54	11.26	1.26	10.00	3.17	1.09	2.08	0.07	6,447.31	1.65	0.22	6,536.44
Total (tons/construction project)	0.08	0.77	0.85	0.37	0.04	0.33	0.10	0.03	0.07	0.00	187.33	0.04	0.01	189.85

Notes:

Project Start Year ->	2022
Project Length (months) ->	4
Total Project Area (acres) ->	2
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	200	0	300	0	200	0
Grading/Excavation	100	0	150	0	1,120	0
Drainage/Utilities/Sub-Grade	20	0	30	0	720	0
Paving	0	100	0	150	320	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> SR-49 Improvements (Option A)				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.01	0.12	0.12	0.06	0.01	0.06	0.02	0.01	0.01	0.00	27.65	0.00	0.00	25.50
Grading/Excavation	0.05	0.38	0.49	0.19	0.02	0.17	0.05	0.02	0.03	0.00	106.38	0.03	0.00	97.84
Drainage/Utilities/Sub-Grade	0.02	0.20	0.19	0.12	0.01	0.11	0.03	0.01	0.02	0.00	39.36	0.01	0.00	36.00
Paving	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.94	0.00	0.00	12.88
Maximum (tons/phase)	0.05	0.38	0.49	0.19	0.02	0.17	0.05	0.02	0.03	0.00	106.38	0.03	0.00	97.84
Total (tons/construction project)	0.08	0.77	0.85	0.37	0.04	0.33	0.10	0.03	0.07	0.00	187.33	0.04	0.01	172.23

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	SR-49 Improvements (Option A)	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	3.50	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.50	miles
Total Project Area	2.25	acres
Maximum Area Disturbed/Day	0.50	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	100.00	100.00
	Grading/Excavation	20.00	50.00	50.00
	Drainage/Utilities/Sub-Grade	20.00	10.00	10.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	100.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard
Off-road Equipment Emissions Mitigation	No Mitigation	

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.50	0.35		1/1/2022
Grading/Excavation	1.50	1.58		1/17/2022
Drainage/Utilities/Sub-Grade	1.00	1.05		3/4/2022
Paving	0.50	0.53		4/4/2022
Totals (Months)		4		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		10	300.00
Miles/round trip: Grading/Excavation		30.00		5	150.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		1	30.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.12	0.44	3.20	0.09	0.05	0.01	1,186.37	0.01	0.19	1,242.08
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.02	0.00	0.00	0.00	6.53	0.00	0.00	6.83
Pounds per day - Grading/Excavation	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Grading/Excavation	0.00	0.00	0.03	0.00	0.00	0.00	9.79	0.00	0.00	10.25
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.04	0.32	0.01	0.01	0.00	118.64	0.00	0.02	124.21
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.00	0.00	1.37
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.05	0.00	0.00	0.00	17.62	0.00	0.00	18.44

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		5	150.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.26	0.00	0.00	3.42
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	3.26	0.00	0.00	3.42

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		28	56	1,120.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		8	16	320.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.50	0.04	0.02	0.01	0.00	146.50	0.00	0.00	147.74
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.81
Pounds per day - Grading/Excavation	0.18	2.82	0.25	0.11	0.05	0.01	820.38	0.02	0.02	827.37
Tons per const. Period - Grading/Excavation	0.00	0.05	0.00	0.00	0.00	0.00	13.54	0.00	0.00	13.65
Pounds per day - Drainage/Utilities/Sub-Grade	0.12	1.81	0.16	0.07	0.03	0.01	527.39	0.01	0.01	531.88
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.02	0.00	0.00	0.00	0.00	5.80	0.00	0.00	5.85
Pounds per day - Paving	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00	0.00	1.30
Total tons per construction project	0.00	0.07	0.01	0.00	0.00	0.00	21.43	0.00	0.00	21.62

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.50	10.00	0.06	2.08	0.01
Fugitive Dust - Grading/Excavation		0.50	10.00	0.17	2.08	0.03
Fugitive Dust - Drainage/Utilities/Subgrade		0.50	10.00	0.11	2.08	0.02

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Air Compressors	0.55	4.84	3.76	0.22	0.22	0.01	750.53	0.05
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Concrete/Industrial Saws	0.72	7.33	5.60	0.30	0.30	0.01	1,185.33	0.06
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grubbing/Land Clearing	pounds per day	2.16	20.99	18.92	0.92	0.88	0.04	3,694.92	0.68
	Grubbing/Land Clearing	tons per phase	0.01	0.12	0.10	0.01	0.00	0.00	20.32	0.00

Grading/Excavation	Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Mitigation Option Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.22	2.04	2.27	0.07	0.07	0.01	913.56	0.30
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Cranes	0.37	1.89	4.18	0.17	0.16	0.01	558.83	0.18
1.00	2		Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	4		Model Default Tier	Excavators	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Graders	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.17	1.86	1.73	0.10	0.09	0.00	254.10	0.08
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rubber Tired Loaders	0.29	1.53	3.02	0.10	0.09	0.01	605.66	0.20
0.00	4		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	pounds per day	2.53	20.11	27.70	1.10	1.01	0.05	5,033.74	1.63
Grading/Excavation	tons per phase	0.04	0.33	0.46	0.02	0.02	0.00	83.06	0.03

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.27	2.42	1.88	0.11	0.11	0.00	375.26	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.33	3.68	2.93	0.15	0.15	0.01	623.04	0.03
1.00	2		Model Default Tier	Graders	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.35	3.73	2.97	0.16	0.16	0.01	623.04	0.03
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.11	2.29	1.48	0.05	0.05	0.00	333.75	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day		1.69	16.28	16.44	0.73	0.71	0.03	2,932.09	0.50
Drainage/Utilities/Sub-Grade	tons per phase		0.02	0.18	0.18	0.01	0.01	0.00	32.25	0.01

Paving	Default Number of Vehicles	Override of Default Number of Vehicles	Mitigation Option Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	Program-estimate					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1			Model Default Tier	Pavers	0.21	2.88	2.10	0.10	0.09	0.00	455.26	0.15
	1			Model Default Tier	Paving Equipment	0.18	2.55	1.74	0.08	0.08	0.00	394.47	0.13
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1			Model Default Tier	Rollers	0.17	1.86	1.73	0.10	0.09	0.00	254.10	0.08
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2			Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.48	3.35	0.18	0.17	0.01	602.48	0.19
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	pounds per day	0.88	11.77	8.91	0.46	0.43	0.02	1,706.31	0.55
Paving	tons per phase	0.00	0.06	0.05	0.00	0.00	0.00	9.38	0.00
Total Emissions all Phases (tons per construction period) =>		0.08	0.69	0.79	0.03	0.03	0.00	145.02	0.04

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.01	753.43
0.00	0.00
0.00	0.00
0.01	1,189.60
0.00	0.00
0.01	767.22
0.00	0.00
0.01	1,010.81
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.03	3,721.07
0.00	20.47

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.01	923.43
0.00	0.00
0.00	0.00
0.01	564.85
0.01	767.22
0.00	0.00
0.01	1,010.81
0.00	0.00
0.00	0.00
0.01	648.19
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.84
0.00	0.00
0.00	0.00
0.01	612.20
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	5,088.03
0.00	83.95

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.72
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.17
0.01	648.19
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.23
0.00	0.00
0.00	337.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,951.79
0.00	32.47

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.17
0.00	398.73
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.84
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.96
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,724.69
0.00	9.49
0.00	146.37

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	-	-	-	-	1.2220	-	-	-	-	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	0.0178	0.0178	0.0178	0.0178	1.0001	1.0001	1.0001	1.0001	1.0001	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0178	0.0178	0.0178	0.0178		1.0001	1.0001	1.0001	1.0001	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	-	-	-	-	1.2976	-	-	-	-	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	0.1785	0.1785	0.1785	0.1785	0.6644	0.6644	0.6644	0.6644	0.6644	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.1785	0.1785	0.1785	0.1785		0.6644	0.6644	0.6644	0.6644	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	-	-	-	-	0.5158	-	-	-	-	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	0.0051	0.0051	0.0051	0.0051	0.5106	0.5106	0.5106	0.5106	0.5106	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0051	0.0051	0.0051	0.0051		0.5106	0.5106	0.5106	0.5106	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	-	-	-	-	0.4199	-	-	-	-	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	0.0402	0.0402	0.0402	0.0402	0.4233	0.4233	0.4233	0.4233	0.4233	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0402	0.0402	0.0402	0.0402		0.4233	0.4233	0.4233	0.4233	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	-	-	-	-	3.1768	-	-	-	-	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	0.1047	0.1047	0.1047	0.1047	3.1760	3.1760	3.1760	3.1760	3.1760	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1047	0.1047	0.1047	0.1047		3.1760	3.1760	3.1760	3.1760	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	-	-	-	-	0.0416	-	-	-	-
15	-	-	-	-	0.0333	-	-	-	-
16	1.6266	1.6266	1.6266	1.6266	0.0302	0.0302	0.0302	0.0302	0.0302
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.6266	1.6266	1.6266	1.6266		0.0302	0.0302	0.0302	0.0302

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)				
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5
0	11	0.30	6.00	5.32	0.30	0.28
11	25	0.30	4.90	5.32	0.30	0.28
25	50	0.19	4.10	3.33	0.02	0.02
50	75	0.19	3.70	3.33	0.02	0.02
75	100	0.15	3.70	0.30	0.02	0.01
100	175	0.15	3.70	0.30	0.02	0.01
175	300	0.15	2.60	0.30	0.02	0.01
300	600	0.15	2.60	0.30	0.02	0.01
600	750	0.15	2.60	0.30	0.02	0.01
750	1200	0.15	2.60	2.60	0.03	0.03
1200	9999	0.15	2.60	2.60	0.03	0.03

92
95
1.07

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

ıes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.005	0.259	0.238	471.990	0.153	0.004
0.005	0.141	0.129	469.558	0.152	0.004
0.005	0.069	0.063	476.185	0.154	0.004
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.169	0.155	470.000	0.152	0.004
0.005	0.080	0.074	471.850	0.153	0.004
0.005	0.051	0.047	473.223	0.153	0.004
0.005	0.043	0.040	472.929	0.153	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

0.061	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.054	0.005
0.062	0.005
0.039	0.005
0.021	0.004
0.016	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.015	0.004
0.160	0.005
0.152	0.004
0.155	0.004
0.153	0.004
0.152	0.004
0.022	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005
0.154	0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005
0.153	0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
0.171	0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006
0.153	0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005
0.152	0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005
0.154	0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005
0.170	0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
0.152	0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
0.153	0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
0.153	0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
0.153	0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

0.153	0.004		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005
0.153	0.004		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005
0.169	0.005		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005
0.153	0.004		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005
0.153	0.004		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005
0.153	0.004		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005
0.152	0.004		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005
0.153	0.004		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005
0.170	0.005		Pavers	25	0.918	4.945	4.131	0.005
0.170	0.005		Pavers	50	0.918	4.945	4.131	0.005
0.152	0.004		Pavers	120	0.314	3.493	3.068	0.005
0.153	0.004		Pavers	175	0.181	3.007	1.644	0.005
0.153	0.004		Pavers	250	0.107	1.004	1.035	0.005
0.151	0.004		Pavers	500	0.115	0.969	1.134	0.005
0.169	0.005		Paving Equipment	25	0.476	4.203	3.627	0.005
0.169	0.005		Paving Equipment	50	0.476	4.203	3.627	0.005
0.153	0.004		Paving Equipment	120	0.242	3.483	2.496	0.005
0.152	0.004		Paving Equipment	175	0.175	3.038	1.509	0.005
0.153	0.004		Paving Equipment	250	0.133	1.117	1.110	0.005
0.059	0.005		Plate Compactors	15	0.661	3.469	4.142	0.008
0.054	0.005		Pressure Washers	15	0.607	3.491	4.269	0.008
0.062	0.005		Pressure Washers	25	0.694	2.376	4.407	0.007
0.027	0.005		Pressure Washers	50	0.306	3.210	3.344	0.007
0.017	0.004		Pressure Washers	120	0.189	3.186	2.100	0.006
0.016	0.004		Pressure Washers	175	0.178	2.907	1.310	0.006

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

0.152	0.004
0.152	0.004
0.150	0.004
0.153	0.004
0.156	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.019	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.173	0.005
0.154	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.166	0.005

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
Scrapers	120	0.566	4.094	5.503	0.005
Scrapers	175	0.290	3.321	2.631	0.005
Scrapers	250	0.291	1.602	2.803	0.005
Scrapers	500	0.216	1.732	2.051	0.005
Scrapers	750	0.184	1.338	1.713	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.522	4.217	3.561	0.007
Signal Boards	120	0.278	3.470	2.179	0.006
Signal Boards	175	0.215	3.049	1.262	0.006
Signal Boards	250	0.213	1.257	1.192	0.007
Skid Steer Loaders	25	0.341	3.660	3.309	0.006
Skid Steer Loaders	50	0.341	3.660	3.309	0.006
Skid Steer Loaders	120	0.140	3.252	1.867	0.005
Surfacing Equipment	50	0.235	3.537	3.576	0.006
Surfacing Equipment	120	0.232	3.385	2.659	0.005
Surfacing Equipment	175	0.187	2.926	1.999	0.005
Surfacing Equipment	250	0.148	1.143	1.747	0.005
Surfacing Equipment	500	0.128	1.169	1.327	0.005
Surfacing Equipment	750	0.085	0.978	0.768	0.005
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

2028

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.683	3.491	4.278	0.008	0.183
Pumps	25	0.709	2.376	4.407	0.007	0.177
Pumps	50	0.485	3.943	3.528	0.007	0.099
Pumps	120	0.261	3.389	2.213	0.006	0.092
Pumps	175	0.199	2.974	1.318	0.006	0.056
Pumps	250	0.159	1.016	1.038	0.006	0.029
Pumps	500	0.156	0.992	0.958	0.005	0.028
Pumps	750	0.157	0.992	0.977	0.005	0.029
Pumps	9999	0.186	1.020	2.840	0.005	0.049
Rollers	15	0.569	4.125	3.689	0.005	0.167
Rollers	25	0.569	4.125	3.689	0.005	0.167
Rollers	50	0.569	4.125	3.689	0.005	0.167
Rollers	120	0.255	3.444	2.691	0.005	0.135
Rollers	175	0.127	2.909	1.101	0.005	0.049
Rollers	250	0.173	1.215	1.783	0.005	0.066
Rollers	500	0.212	1.968	2.200	0.005	0.091
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

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0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.030	0.030	568.299	0.038	0.005
0.006	0.027	0.027	568.300	0.020	0.004
0.006	0.019	0.019	568.299	0.014	0.004
0.005	0.014	0.014	568.300	0.013	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.048	0.048	568.299	0.054	0.005
0.006	0.043	0.043	568.299	0.027	0.004
0.006	0.028	0.028	568.299	0.020	0.004
0.006	0.018	0.018	568.299	0.018	0.004
0.005	0.018	0.018	568.299	0.018	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004
0.017	0.004
0.049	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.061	0.005
0.062	0.005
0.030	0.004
0.022	0.004
0.019	0.004
0.019	0.004
0.061	0.005
0.059	0.005
0.029	0.004
0.021	0.004
0.019	0.004
0.059	0.005
0.053	0.005
0.061	0.005
0.016	0.005
0.010	0.004
0.009	0.004

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
Pavers	25	0.685	2.339	4.332	0.007
Pavers	50	0.694	5.260	3.555	0.007
Pavers	120	0.338	3.774	1.986	0.006
Pavers	175	0.244	3.319	0.889	0.006
Pavers	250	0.221	1.157	0.772	0.006
Pavers	500	0.218	1.111	0.722	0.005
Paving Equipment	25	0.685	2.339	4.332	0.007
Paving Equipment	50	0.664	5.181	3.511	0.007
Paving Equipment	120	0.326	3.753	1.928	0.006
Paving Equipment	175	0.235	3.303	0.832	0.006
Paving Equipment	250	0.212	1.140	0.714	0.006
Plate Compactors	15	0.661	3.470	4.142	0.008
Pressure Washers	15	0.589	3.470	4.143	0.008
Pressure Washers	25	0.685	2.340	4.332	0.007
Pressure Washers	50	0.188	3.101	2.882	0.007
Pressure Washers	120	0.116	3.161	1.421	0.006
Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.059	0.005
0.032	0.005
0.017	0.004
0.012	0.004
0.014	0.004
0.061	0.005
0.037	0.005
0.019	0.004
0.039	0.005
0.020	0.004
0.014	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.045	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.061	0.005

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
Scrapers	120	0.348	3.842	1.943	0.006
Scrapers	175	0.250	3.382	0.824	0.006
Scrapers	250	0.229	1.175	0.717	0.006
Scrapers	500	0.226	1.123	0.674	0.005
Scrapers	750	0.226	1.123	0.682	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.356	4.067	3.082	0.007
Signal Boards	120	0.192	3.445	1.482	0.006
Signal Boards	175	0.138	3.048	0.372	0.006
Signal Boards	250	0.162	1.254	0.401	0.007
Skid Steer Loaders	25	0.685	2.339	4.332	0.007
Skid Steer Loaders	50	0.411	4.390	3.097	0.007
Skid Steer Loaders	120	0.211	3.540	1.442	0.006
Surfacing Equipment	50	0.439	4.221	3.193	0.007
Surfacing Equipment	120	0.226	3.482	1.659	0.006
Surfacing Equipment	175	0.162	3.072	0.567	0.006
Surfacing Equipment	250	0.149	1.050	0.497	0.006
Surfacing Equipment	500	0.148	1.018	0.471	0.005
Surfacing Equipment	750	0.148	1.018	0.477	0.005
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

2038

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
0.296	0.006	0.011	0.011	568.299	0.011	0.004
0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
1.435	0.006	0.013	0.013	568.300	0.019	0.004
3.114	0.007	0.025	0.025	568.299	0.035	0.005
1.521	0.006	0.024	0.024	568.299	0.018	0.004
0.397	0.006	0.017	0.017	568.299	0.013	0.004
0.370	0.006	0.013	0.013	568.299	0.012	0.004
0.358	0.005	0.012	0.012	568.299	0.012	0.004
0.361	0.005	0.013	0.013	568.299	0.012	0.004
4.142	0.008	0.161	0.161	568.300	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.203	0.007	0.016	0.016	568.300	0.045	0.005
1.469	0.006	0.015	0.015	568.299	0.022	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgrc
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgrc

ound/gwp.htm
ound/gwp.htm

Welcome to the Road Construction Emissions Model, Version 9.0.0

User Instructions

This spreadsheet system contains the following individual worksheets:

1 This worksheet of User Instructions
2 Updates
3 Emission Estimates
4 Data Entry
5 Non-default Off-road Equipment
6 EMFAC2017
7 On-road Mitigation EF
8 OFFROAD Convert
9 Off-road Tier 4 EF
10 OFFROAD HP & LF
11 OFFROAD EF
12 x-ref

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and tons) by project phase and tons over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.

The last seven of these worksheets - EMFAC2017, On-road Mitigation EF, OFFROAD Convert, Off-road Tier 4 EF, OFFROAD HP & LP, OFFROAD EF and x-ref - cannot be modified by the user. They are protected worksheets.

Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticipate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet. This spreadsheet was prepared by Jones & Stokes, TIAX LLC and Ramboll Environ with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

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John Grant

Road Construction Emissions Model, Version 9.0.0

Updates Log

Changes from previous version of Road Construction Emissions Model

(Version 8.1.0 to 9.0.0) (updated by SMAQMD 04/22/18 with assistance from Ramboll)

1) Project length changed to include calendar years 2014 through 2040.
2) On-road vehicle emission factors have been updated to EMFAC2017 version 1.0.2.
3) Off-road emission rates updated to include calendar years 2014 through 2040.
4) Average Offroad HP by Equipment Type updated to be consistent with CalEEMod (version 2016.3.2)
5) Modified 'Data Entry' tab to calculate NOx start emissions form heavy duty trucks in "soil hauling", "asphalt hauling"

(Version 7.1.5 to 8.1.0) (updated by SMAQMD 05/09/16 with assistance from Ramboll ENVIRON US Corporatio

1) Project length changed to include calendar years 2014 through 2025.
2) Added a new project type: Type 4: Other Linear Project Type. Note that there are no default vehicle or equipment ac
3) Emissions estimates were extended to include SOx, CH4, N2O and CO2e.
4) Updated off-road equipment emission factors and default average horsepower by equipment type to be consistent v
5) On-road vehicle emission factors have been updated to EMFAC2014.
6) Revised pollutant order for consistency throughout the calculator.
7) Added flexibility for users to specify a non-default number of working days per month.
8) Modified soil hauling import and export quantity and haul truck capacity data requests to allow users to specify soil
9) Soil hauling emissions are now estimated separately for each construction phase.
10) Added a new feature to allow users to provide asphalt hauling quantities by phase in the "Data Entry" tab.
11) New component added where the user can specify construction start date and duration by phase.
12) The maximum daily emissions calculation was modified to sum emissions from overlapping construction phases.
13) Water truck activity can be specified and emissions estimated for the paving phase.
14) Mitigation options were added for on-road vehicles and off-road equipment. Emissions calculations include the eff
15) Model allows user to estimate emissions from non-default off-road equipment for all phases and for all project type equipment type for horsepower, number of equipment, load factor, hours of operation and emission factors in the "Nor
16) New table of total project emissions with units of tons/phase was added in the "Emission Estimates" tab.
17) Removed table of daily emissions in metric units from the "Emission Estimates" tab.
18) Removed unnecessary data from all tabs.

(Version 7.1.4 to 7.1.5) (updated by SMAQMD 12/11/13 with assistance from ENVIRON Corporation)

1) Grubbing and Land Clearing Phase calculation of active months in 2007, 2017, 2019 fixed.
2) Soil Hauling Emissions calculation to select override if it exists for round trips/day.
3) Worker Commute Emissions calculation of starting and hot soak emissions; drainage phase PM_{10} emission rate.
4) Water Truck Emissions calculation to select number of months for Grubbing and Land Clearing Phase; maximum a

(Version 6.3.2 to Version 7.1.0, 7.1.1, 7.1.2, 7.1.3 & 7.1.4) (updated by SMAQMD 8/2/13)

1) EMFAC2011 emission factors added (previous EMFAC versions dropped).
2) OFFROAD2011 emission factors added (and fixed error).
3) OFFROAD2007 for categories not in OFFROAD2011 (and fixed error)
4) Project length changed to include calendar years 2009 through 2025.
5) Average Offroad HP by Equipment Type calculation updated and corrected
6) Load Factor Adjustment deactivated (default load factors already incorporated in ARB's calculation of emission fact
7) Crawler Tractor equipment added to model
8) Air Compressors ROG & Default Excavators calculation on Data Entry sheet corrected.
9) Default equipment list updated
10) Corrections to Worker Commute Emissions calculations

and "water truck" section

n)

ctivities available for the Project Type 4. □

with CalEEMod (version 2013.2.2).□

hauling activity by phase.□

ects of mitigations if a mitigation option is selected by the user.
es. Non-default off-road equipment specification must be included by
n-default Off-road Equipment" tab.

ıcreage/day after 2025.

:ors)

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> SR-49 Improvements (Option A)				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	2.37	22.15	23.77	11.08	1.08	10.00	3.05	0.97	2.08	0.06	5,620.98	0.69	0.31	5,731.93
Grading/Excavation	2.81	23.28	30.51	11.29	1.29	10.00	3.18	1.10	2.08	0.07	6,803.22	1.65	0.22	6,909.07
Drainage/Utilities/Sub-Grade	1.81	18.14	16.92	10.81	0.81	10.00	2.82	0.74	2.08	0.04	3,578.11	0.52	0.06	3,607.88
Paving	0.99	12.79	10.59	0.54	0.54	0.00	0.47	0.47	0.00	0.03	2,533.89	0.56	0.11	2,582.13
Maximum (pounds/day)	2.81	23.28	30.51	11.29	1.29	10.00	3.18	1.10	2.08	0.07	6,803.22	1.65	0.31	6,909.07
Total (tons/construction project)	0.08	0.78	0.88	0.37	0.04	0.33	0.10	0.03	0.07	0.00	196.46	0.04	0.01	199.41

Notes:

Project Start Year ->	2022
Project Length (months) ->	4
Total Project Area (acres) ->	2
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	300	0	450	0	200	0
Grading/Excavation	150	0	240	0	1,120	0
Drainage/Utilities/Sub-Grade	20	0	30	0	720	0
Paving	0	100	0	150	320	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> SR-49 Improvements (Option A)				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.01	0.12	0.13	0.06	0.01	0.06	0.02	0.01	0.01	0.00	30.92	0.00	0.00	28.60
Grading/Excavation	0.05	0.38	0.50	0.19	0.02	0.17	0.05	0.02	0.03	0.00	112.25	0.03	0.00	103.42
Drainage/Utilities/Sub-Grade	0.02	0.20	0.19	0.12	0.01	0.11	0.03	0.01	0.02	0.00	39.36	0.01	0.00	36.00
Paving	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.94	0.00	0.00	12.88
Maximum (tons/phase)	0.05	0.38	0.50	0.19	0.02	0.17	0.05	0.02	0.03	0.00	112.25	0.03	0.00	103.42
Total (tons/construction project)	0.08	0.78	0.88	0.37	0.04	0.33	0.10	0.03	0.07	0.00	196.46	0.04	0.01	180.91

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	SR-49 Improvements (Option A)	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	3.50	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.50	miles
Total Project Area	2.20	acres
Maximum Area Disturbed/Day	0.50	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	150.00	150.00
	Grading/Excavation	20.00	75.00	75.00
	Drainage/Utilities/Sub-Grade	20.00	10.00	10.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	100.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard
Off-road Equipment Emissions Mitigation	No Mitigation	

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.50	0.35		1/1/2022
Grading/Excavation	1.50	1.58		1/17/2022
Drainage/Utilities/Sub-Grade	1.00	1.05		3/4/2022
Paving	0.50	0.53		4/4/2022
Totals (Months)		4		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		15	450.00
Miles/round trip: Grading/Excavation		30.00		8	240.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		1	30.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.18	0.66	4.80	0.14	0.08	0.02	1,779.56	0.01	0.28	1,863.12
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.03	0.00	0.00	0.00	9.79	0.00	0.00	10.25
Pounds per day - Grading/Excavation	0.09	0.35	2.56	0.08	0.04	0.01	949.10	0.00	0.15	993.66
Tons per const. Period - Grading/Excavation	0.00	0.01	0.04	0.00	0.00	0.00	15.66	0.00	0.00	16.40
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.04	0.32	0.01	0.01	0.00	118.64	0.00	0.02	124.21
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.00	0.00	1.37
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.07	0.00	0.00	0.00	26.75	0.00	0.00	28.01

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		5	150.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.06	0.22	1.60	0.05	0.03	0.01	593.19	0.00	0.09	621.04
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.26	0.00	0.00	3.42
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	3.26	0.00	0.00	3.42

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		28	56	1,120.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		8	16	320.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.50	0.04	0.02	0.01	0.00	146.50	0.00	0.00	147.74
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.81
Pounds per day - Grading/Excavation	0.18	2.82	0.25	0.11	0.05	0.01	820.38	0.02	0.02	827.37
Tons per const. Period - Grading/Excavation	0.00	0.05	0.00	0.00	0.00	0.00	13.54	0.00	0.00	13.65
Pounds per day - Drainage/Utilities/Sub-Grade	0.12	1.81	0.16	0.07	0.03	0.01	527.39	0.01	0.01	531.88
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.02	0.00	0.00	0.00	0.00	5.80	0.00	0.00	5.85
Pounds per day - Paving	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00	0.00	1.30
Total tons per construction project	0.00	0.07	0.01	0.00	0.00	0.00	21.43	0.00	0.00	21.62

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.50	10.00	0.06	2.08	0.01
Fugitive Dust - Grading/Excavation		0.50	10.00	0.17	2.08	0.03
Fugitive Dust - Drainage/Utilities/Subgrade		0.50	10.00	0.11	2.08	0.02

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Air Compressors	0.55	4.84	3.76	0.22	0.22	0.01	750.53	0.05
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Concrete/Industrial Saws	0.72	7.33	5.60	0.30	0.30	0.01	1,185.33	0.06
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grubbing/Land Clearing	pounds per day	2.16	20.99	18.92	0.92	0.88	0.04	3,694.92	0.68
	Grubbing/Land Clearing	tons per phase	0.01	0.12	0.10	0.01	0.00	0.00	20.32	0.00

Grading/Excavation	Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Mitigation Option Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.22	2.04	2.27	0.07	0.07	0.01	913.56	0.30
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Cranes	0.37	1.89	4.18	0.17	0.16	0.01	558.83	0.18
1.00	2		Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	4		Model Default Tier	Excavators	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Graders	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.17	1.86	1.73	0.10	0.09	0.00	254.10	0.08
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rubber Tired Loaders	0.29	1.53	3.02	0.10	0.09	0.01	605.66	0.20
0.00	4		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	pounds per day	2.53	20.11	27.70	1.10	1.01	0.05	5,033.74	1.63
Grading/Excavation	tons per phase	0.04	0.33	0.46	0.02	0.02	0.00	83.06	0.03

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.27	2.42	1.88	0.11	0.11	0.00	375.26	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.33	3.68	2.93	0.15	0.15	0.01	623.04	0.03
1.00	2		Model Default Tier	Graders	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.35	3.73	2.97	0.16	0.16	0.01	623.04	0.03
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.11	2.29	1.48	0.05	0.05	0.00	333.75	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day		1.69	16.28	16.44	0.73	0.71	0.03	2,932.09	0.50
Drainage/Utilities/Sub-Grade	tons per phase		0.02	0.18	0.18	0.01	0.01	0.00	32.25	0.01

Paving	Default Number of Vehicles	Override of Default Number of Vehicles	Mitigation Option Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	Program-estimate					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1			Model Default Tier	Pavers	0.21	2.88	2.10	0.10	0.09	0.00	455.26	0.15
	1			Model Default Tier	Paving Equipment	0.18	2.55	1.74	0.08	0.08	0.00	394.47	0.13
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1			Model Default Tier	Rollers	0.17	1.86	1.73	0.10	0.09	0.00	254.10	0.08
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2			Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.48	3.35	0.18	0.17	0.01	602.48	0.19
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	pounds per day	0.88	11.77	8.91	0.46	0.43	0.02	1,706.31	0.55
Paving	tons per phase	0.00	0.06	0.05	0.00	0.00	0.00	9.38	0.00
Total Emissions all Phases (tons per construction period) =>		0.08	0.69	0.79	0.03	0.03	0.00	145.02	0.04

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.01	753.43
0.00	0.00
0.00	0.00
0.01	1,189.60
0.00	0.00
0.01	767.22
0.00	0.00
0.01	1,010.81
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.03	3,721.07
0.00	20.47

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.01	923.43
0.00	0.00
0.00	0.00
0.01	564.85
0.01	767.22
0.00	0.00
0.01	1,010.81
0.00	0.00
0.00	0.00
0.01	648.19
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.84
0.00	0.00
0.00	0.00
0.01	612.20
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	5,088.03
0.00	83.95

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.72
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.17
0.01	648.19
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.23
0.00	0.00
0.00	337.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	304.48
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,951.79
0.00	32.47

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.17
0.00	398.73
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.84
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.96
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,724.69
0.00	9.49
0.00	146.37

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	-	-	-	-	1.2220	-	-	-	-	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	0.0178	0.0178	0.0178	0.0178	1.0001	1.0001	1.0001	1.0001	1.0001	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0178	0.0178	0.0178	0.0178		1.0001	1.0001	1.0001	1.0001	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	-	-	-	-	1.2976	-	-	-	-	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	0.1785	0.1785	0.1785	0.1785	0.6644	0.6644	0.6644	0.6644	0.6644	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.1785	0.1785	0.1785	0.1785		0.6644	0.6644	0.6644	0.6644	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	-	-	-	-	0.5158	-	-	-	-	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	0.0051	0.0051	0.0051	0.0051	0.5106	0.5106	0.5106	0.5106	0.5106	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0051	0.0051	0.0051	0.0051		0.5106	0.5106	0.5106	0.5106	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	-	-	-	-	0.4199	-	-	-	-	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	0.0402	0.0402	0.0402	0.0402	0.4233	0.4233	0.4233	0.4233	0.4233	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0402	0.0402	0.0402	0.0402		0.4233	0.4233	0.4233	0.4233	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	-	-	-	-	3.1768	-	-	-	-	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	0.1047	0.1047	0.1047	0.1047	3.1760	3.1760	3.1760	3.1760	3.1760	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1047	0.1047	0.1047	0.1047		3.1760	3.1760	3.1760	3.1760	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	-	-	-	-	0.0416	-	-	-	-
15	-	-	-	-	0.0333	-	-	-	-
16	1.6266	1.6266	1.6266	1.6266	0.0302	0.0302	0.0302	0.0302	0.0302
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.6266	1.6266	1.6266	1.6266		0.0302	0.0302	0.0302	0.0302

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)				
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5
0	11	0.30	6.00	5.32	0.30	0.28
11	25	0.30	4.90	5.32	0.30	0.28
25	50	0.19	4.10	3.33	0.02	0.02
50	75	0.19	3.70	3.33	0.02	0.02
75	100	0.15	3.70	0.30	0.02	0.01
100	175	0.15	3.70	0.30	0.02	0.01
175	300	0.15	2.60	0.30	0.02	0.01
300	600	0.15	2.60	0.30	0.02	0.01
600	750	0.15	2.60	0.30	0.02	0.01
750	1200	0.15	2.60	2.60	0.03	0.03
1200	9999	0.15	2.60	2.60	0.03	0.03

92
95
1.07

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

ıes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.006	0.322	0.296	529.339	0.171	0.005
0.005	0.259	0.238	471.990	0.153	0.004
0.005	0.141	0.129	469.558	0.152	0.004
0.005	0.069	0.063	476.185	0.154	0.004
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.194	0.179	526.176	0.170	0.005
0.005	0.169	0.155	470.000	0.152	0.004
0.005	0.080	0.074	471.850	0.153	0.004
0.005	0.051	0.047	473.223	0.153	0.004
0.005	0.043	0.040	472.929	0.153	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

0.061	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.054	0.005
0.062	0.005
0.039	0.005
0.021	0.004
0.016	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.015	0.004
0.160	0.005
0.152	0.004
0.155	0.004
0.153	0.004
0.152	0.004
0.022	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005
0.154	0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005
0.153	0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
0.171	0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006
0.171	0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006
0.153	0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005
0.152	0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005
0.154	0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005
0.170	0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
0.170	0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
0.152	0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
0.153	0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
0.153	0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
0.153	0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

0.153	0.004		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005
0.153	0.004		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005
0.169	0.005		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005
0.153	0.004		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005
0.153	0.004		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005
0.153	0.004		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005
0.152	0.004		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005
0.153	0.004		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005
0.170	0.005		Pavers	25	0.918	4.945	4.131	0.005
0.170	0.005		Pavers	50	0.918	4.945	4.131	0.005
0.152	0.004		Pavers	120	0.314	3.493	3.068	0.005
0.153	0.004		Pavers	175	0.181	3.007	1.644	0.005
0.153	0.004		Pavers	250	0.107	1.004	1.035	0.005
0.151	0.004		Pavers	500	0.115	0.969	1.134	0.005
0.169	0.005		Paving Equipment	25	0.476	4.203	3.627	0.005
0.169	0.005		Paving Equipment	50	0.476	4.203	3.627	0.005
0.153	0.004		Paving Equipment	120	0.242	3.483	2.496	0.005
0.152	0.004		Paving Equipment	175	0.175	3.038	1.509	0.005
0.153	0.004		Paving Equipment	250	0.133	1.117	1.110	0.005
0.059	0.005		Plate Compactors	15	0.661	3.469	4.142	0.008
0.054	0.005		Pressure Washers	15	0.607	3.491	4.269	0.008
0.062	0.005		Pressure Washers	25	0.694	2.376	4.407	0.007
0.027	0.005		Pressure Washers	50	0.306	3.210	3.344	0.007
0.017	0.004		Pressure Washers	120	0.189	3.186	2.100	0.006
0.016	0.004		Pressure Washers	175	0.178	2.907	1.310	0.006

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

0.152	0.004
0.152	0.004
0.150	0.004
0.153	0.004
0.156	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.019	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.173	0.005
0.154	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.152	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.166	0.005

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
Scrapers	120	0.566	4.094	5.503	0.005
Scrapers	175	0.290	3.321	2.631	0.005
Scrapers	250	0.291	1.602	2.803	0.005
Scrapers	500	0.216	1.732	2.051	0.005
Scrapers	750	0.184	1.338	1.713	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.522	4.217	3.561	0.007
Signal Boards	120	0.278	3.470	2.179	0.006
Signal Boards	175	0.215	3.049	1.262	0.006
Signal Boards	250	0.213	1.257	1.192	0.007
Skid Steer Loaders	25	0.341	3.660	3.309	0.006
Skid Steer Loaders	50	0.341	3.660	3.309	0.006
Skid Steer Loaders	120	0.140	3.252	1.867	0.005
Surfacing Equipment	50	0.235	3.537	3.576	0.006
Surfacing Equipment	120	0.232	3.385	2.659	0.005
Surfacing Equipment	175	0.187	2.926	1.999	0.005
Surfacing Equipment	250	0.148	1.143	1.747	0.005
Surfacing Equipment	500	0.128	1.169	1.327	0.005
Surfacing Equipment	750	0.085	0.978	0.768	0.005
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.683	3.491	4.278	0.008	0.183
Pumps	25	0.709	2.376	4.407	0.007	0.177
Pumps	50	0.485	3.943	3.528	0.007	0.099
Pumps	120	0.261	3.389	2.213	0.006	0.092
Pumps	175	0.199	2.974	1.318	0.006	0.056
Pumps	250	0.159	1.016	1.038	0.006	0.029
Pumps	500	0.156	0.992	0.958	0.005	0.028
Pumps	750	0.157	0.992	0.977	0.005	0.029
Pumps	9999	0.186	1.020	2.840	0.005	0.049
Rollers	15	0.569	4.125	3.689	0.005	0.167
Rollers	25	0.569	4.125	3.689	0.005	0.167
Rollers	50	0.569	4.125	3.689	0.005	0.167
Rollers	120	0.255	3.444	2.691	0.005	0.135
Rollers	175	0.127	2.909	1.101	0.005	0.049
Rollers	250	0.173	1.215	1.783	0.005	0.066
Rollers	500	0.212	1.968	2.200	0.005	0.091
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

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0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.030	0.030	568.299	0.038	0.005
0.006	0.027	0.027	568.300	0.020	0.004
0.006	0.019	0.019	568.299	0.014	0.004
0.005	0.014	0.014	568.300	0.013	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.048	0.048	568.299	0.054	0.005
0.006	0.043	0.043	568.299	0.027	0.004
0.006	0.028	0.028	568.299	0.020	0.004
0.006	0.018	0.018	568.299	0.018	0.004
0.005	0.018	0.018	568.299	0.018	0.004

Off-Highway Trucks	500
Off-Highway Trucks	750
Off-Highway Trucks	1000
Other Construction Equipment	15
Other Construction Equipment	25
Other Construction Equipment	50
Other Construction Equipment	120
Other Construction Equipment	175
Other Construction Equipment	500
Other General Industrial Equipment	15
Other General Industrial Equipment	25
Other General Industrial Equipment	50
Other General Industrial Equipment	120
Other General Industrial Equipment	175
Other General Industrial Equipment	250
Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004
0.017	0.004
0.049	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.061	0.005
0.062	0.005
0.030	0.004
0.022	0.004
0.019	0.004
0.019	0.004
0.061	0.005
0.059	0.005
0.029	0.004
0.021	0.004
0.019	0.004
0.059	0.005
0.053	0.005
0.061	0.005
0.016	0.005
0.010	0.004
0.009	0.004

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
Pavers	25	0.685	2.339	4.332	0.007
Pavers	50	0.694	5.260	3.555	0.007
Pavers	120	0.338	3.774	1.986	0.006
Pavers	175	0.244	3.319	0.889	0.006
Pavers	250	0.221	1.157	0.772	0.006
Pavers	500	0.218	1.111	0.722	0.005
Paving Equipment	25	0.685	2.339	4.332	0.007
Paving Equipment	50	0.664	5.181	3.511	0.007
Paving Equipment	120	0.326	3.753	1.928	0.006
Paving Equipment	175	0.235	3.303	0.832	0.006
Paving Equipment	250	0.212	1.140	0.714	0.006
Plate Compactors	15	0.661	3.470	4.142	0.008
Pressure Washers	15	0.589	3.470	4.143	0.008
Pressure Washers	25	0.685	2.340	4.332	0.007
Pressure Washers	50	0.188	3.101	2.882	0.007
Pressure Washers	120	0.116	3.161	1.421	0.006
Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.059	0.005
0.032	0.005
0.017	0.004
0.012	0.004
0.014	0.004
0.061	0.005
0.037	0.005
0.019	0.004
0.039	0.005
0.020	0.004
0.014	0.004
0.013	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.045	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.061	0.005

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
Scrapers	120	0.348	3.842	1.943	0.006
Scrapers	175	0.250	3.382	0.824	0.006
Scrapers	250	0.229	1.175	0.717	0.006
Scrapers	500	0.226	1.123	0.674	0.005
Scrapers	750	0.226	1.123	0.682	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	0.356	4.067	3.082	0.007
Signal Boards	120	0.192	3.445	1.482	0.006
Signal Boards	175	0.138	3.048	0.372	0.006
Signal Boards	250	0.162	1.254	0.401	0.007
Skid Steer Loaders	25	0.685	2.339	4.332	0.007
Skid Steer Loaders	50	0.411	4.390	3.097	0.007
Skid Steer Loaders	120	0.211	3.540	1.442	0.006
Surfacing Equipment	50	0.439	4.221	3.193	0.007
Surfacing Equipment	120	0.226	3.482	1.659	0.006
Surfacing Equipment	175	0.162	3.072	0.567	0.006
Surfacing Equipment	250	0.149	1.050	0.497	0.006
Surfacing Equipment	500	0.148	1.018	0.471	0.005
Surfacing Equipment	750	0.148	1.018	0.477	0.005
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
0.296	0.006	0.011	0.011	568.299	0.011	0.004
0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
1.435	0.006	0.013	0.013	568.300	0.019	0.004
3.114	0.007	0.025	0.025	568.299	0.035	0.005
1.521	0.006	0.024	0.024	568.299	0.018	0.004
0.397	0.006	0.017	0.017	568.299	0.013	0.004
0.370	0.006	0.013	0.013	568.299	0.012	0.004
0.358	0.005	0.012	0.012	568.299	0.012	0.004
0.361	0.005	0.013	0.013	568.299	0.012	0.004
4.142	0.008	0.161	0.161	568.300	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.203	0.007	0.016	0.016	568.300	0.045	0.005
1.469	0.006	0.015	0.015	568.299	0.022	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgrc
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgrc

ound/gwp.htm
ound/gwp.htm

Dorado Oaks Subdivision - Construction data for CalEEMod

Construction

Please enter data only in highlighted cells.

Data available and confirmed in RFI	Data Needed	Used CalEEMod default
Proposed Land Uses	**No. of Units**	**Built Area**
Single Family Residential	157	1307671
Multi family Residential	225	791485
Landscaping, Parks & Open Space Areas	19	2991700
On-site Roadway Improvements		

Site Area	142.50	acres
Area to be demolished	0	square feet
Total Proposed building area	5,090,856	square feet
Volume of infill to be brought in	7,900	cubic yards
Volume of material to be exported	0	cubic yards

Construction schedule

Start date of construction	5/15/2022
First year of operation	2022

Construction Phase	Start Date	End Date
Site Preparation	5/15/2022	6/30/2022
Grading	6/16/2022	7/31/2022
Building Construction	10/15/2022	
Paving	9/15/2022	10/15/2022
Architectural Coating		

Construction schedule

Start date of construction	5/15/2022
First year of operation	2027

Construction Phase	Start Date	End Date
Site Preparation	5/15/2022	6/30/2022
Grading	7/1/2022	10/27/2022
Building Construction	10/28/2022	1/14/2026
Paving	1/15/2026	4/10/2026
Architectural Coating	4/11/2026	7/7/2026

Construction Equipment

Site Preparation		
Equipment	Number	Hrs/day used
Off-Highway Trucks	4	6
Scrapers	4	6
Skid Steer Loaders	2	6
Tractors/Loaders/Backhoes	2	6
Grading		
Equipment	Number	Hrs/day used
Scrapers	4	6
Excavators	2	6
Graders	2	6
Off-Highway Tractors	2	6

Rollers	2	6
Tractors/Loaders/Backhoes	4	6
Dumpers/Tenders	6	6
Other Construction Equipment	5	6
Building Construction		
Equipment	Number	Hrs/day used
Paving		
Equipment	Number	Hrs/day used
Dumpers/Tenders	6	6
Pavers	1	6
Rollers	2	6
Paving Equipment	4	6
Plate Compactors	2	6
Architectural Coating		
Equipment	Number	Hrs/day used

Construction Vehicle Trips

Please provide the number of trips associated with workers, material delivery and hauling during each construction p

Construction Phase	worker trips/day	Vendor Truck Trips/day
Site Preparation	10	2
Grading	20	2
Building Construction		
Paving	10	2
Architectural Coating		

Operational Trips

Land Use	CalEEMod Land Use	Size (units)
Single Family Residential	Single Family Housing	157
Multi family Residential	Apartment Low Rise	225

CalEEMod Default Trip rates	wkdy	Sat
Single Family Housing	9.52	9.91
Apartment Low Rise	6.59	7.16

Project Adjusted Trip rates	wkdy	Sat
Single Family Housing	9.46	9.85
Apartment Low Rise	5.81	6.31

Fireplaces	CalEEMod Defaults	
	Wood	Gas
Single Family Housing	54.95	86.35

Apartment Low Rise	78.75	123.75

Energy Consumption

Residential	% savings over Title 24 (2016)	
	Electricity	Lighting
Multi-Family without PV	2%	0%
CalEEMod defaults (based on 2016 Title 24)		
Single Family Housing	912.41	1608.84
Apartment Low Rise	775.93	810.36
Adjusted for Title 24 (2019)		
Single Family Housing	894.16	1608.84
Apartment Low Rise	760.41	810.36

In response to RFI	Data assumed	
Units	**Site Area**	**Units**
square feet	30.02	acres
square feet	18.17	acres
square feet	68.7	acres
	18.5	acres

of workdays
34
32
-32035
22
0

-31947

of workdays
34
85
839
62
62

1082

)hase

Hauling Truck trips/day	Hauling Truck trips/phase
5	170
10	850
20	1240

Daily Trips	Trip Rate
1485	9.46
1307	5.81

Sun
8.62
6.07

Sun
8.56
5.35

	Assumed	
None	Propane	None
15.7	141.3	15.7

22.5	202.5	22.5

NG
5%
10517.5
9200.58
9991.63
9161.78

SR-49 Intersection Improvements - Construction data for Roadway Construction

Data available and confirmed in RFI	Data Needed	Used CalEEMod default

	Option A	
	Start date	End Date
Overall Construction Schedule	5/15/2022	
Construction Duration (months)	9-12	
Building Demolition Area (square feet)	13200	
Project length (miles)	0.5	
Project Area (acres)	2.25	
Max. area disturbed/day (acres)	0.5	
Predominant soil type	Weathered Rock-Earth : Use for Laguna formation (Ja	

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)
Soil	Grubbing/Land Clearing	20
	Grading/Excavation	20
	Drainage/Utilities	20
	Paving	20
Asphalt	Grubbing/Land Clearing	20
	Grading/Excavation	20
	Drainage/Utilities	20
	Paving	20

Construction Phasing & Schedule		Option A
Construction Phase	**Duration (months)**	**Start date**
Demolition	1	5/15/2022
Grubbing/Land Clearing	0.5	6/16/2022
Grading/Excavation	1.5	7/1/2022
Drainage/Utilities	1.0	8/15/2022
Paving	0.5	9/16/2022
TOTAL	4.5	

Construction Equipment

Demolition		
Equipment	Number	Hrs/day used
Grubbing/Land Clearing		
Equipment	Number	Hrs/day used
Air Compressors	2	8

Concrete/Industrial Saws	2	8
Crawler Tractors	1	8
Excavators	2	8
Grading/Excavation		
Equipment	Number	Hrs/day used
Bore/Drill Rigs	1	8
Crawler Tractors	1	8
Cranes	1	8
Excavators	2	8
Graders	1	8
Rollers	1	8
Rubber Tired Loaders	1	8
Tractors/Loaders/Backhoes	1	8
Drainage/Utilities		
Equipment	Number	Hrs/day used
Graders	1	8
Tractors/Loaders/Backhoes	1	8
Air Compressors	1	8
Generator Sets	1	8
Plate Compactors	1	8
Pumps	1	8
Rough Terrain Forklifts	1	8
Paving		
Equipment	Number	Hrs/day used
Pavers	1	8
Paving Equipment	1	8
Rollers	1	8
Tractors/Loaders/Backhoes	2	8

Construction Vehicle Trips

Please provide the number of **trips** associated with workers, material delivery and hauling during ea

Construction Phase	worker trips/day	Vendor Truck Trips/day
Demolition	10	2
Grubbing/Land Clearing	10	1
Grading/Excavation	20	0
Drainage/Utilities	30	0
Paving	10	0

Emissions Model

In response to RFI	Data assumed

Option B	
Start date	End Date
5/15/2022	
6-9	
0	
0.5	
2.20	
0.5	

ckson Highway area) or the Ione formation (Scott Road, Rancho Murieta)

Option A		Option B	
Import Volume (yd^3/day)	Export Volume (yd^3/day)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
100.00	100.00	150.00	150.00
50.00	50.00	75.00	75.00
10.00	10.00	10.00	10.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
100.00	0.00	100.00	0.00

	Option B		
End Date	Start date	End Date	Duration (months)
6/15/2022	--	--	--
6/30/2022	6/16/2022	6/30/2022	0.5
8/15/2022	7/1/2022	8/15/2022	1.5
9/15/2022	8/15/2022	9/15/2022	1.0
9/30/2022	9/16/2022	9/30/2022	0.5
			3.5

ach construction phase

Hauling Truck trips/day
5
5
10
20
20

New EVA - Construction data for Roadway Construction Emissions Model

Data available and confirmed in RFI	Data Needed	RCEM default

	Start date	End Date
Overall Construction Schedule	5/15/2022	
Construction Duration	3-6	months
Project length (feet)	2600	
Project Area (acres)	1.8	
Max. area disturbed/day (acres)	0.1	
Predominant soil type	Weathered Rock-Earth : Use for Laguna formatio	

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)
Soil	Grubbing/Land Clearing	20
	Grading/Excavation	20
	Drainage/Utilities	20
	Paving	20
Asphalt	Grubbing/Land Clearing	20
	Grading/Excavation	20
	Drainage/Utilities	20
	Paving	20

Construction Phasing & Schedule

Construction Phase	Start date	End Date
Grubbing/Land Clearing	6/30/2022	7/7/2022
Grading/Excavation	7/8/2022	7/23/2022
Drainage/Utilities	7/8/2022	7/23/2022
Paving	7/24/2022	7/31/2022
TOTAL		

Construction Equipment by Phase

Grubbing/Land Clearing		
Equipment	Number	No. of Days used
Excavators	1	5
Dumpers/Tenders	3	5
Skid Steer Loaders	1	5
Tractors/Loaders/Backhoes	2	5
Grading/Excavation		
Equipment	Number	No. of Days used
Excavators	1	15
Dumpers/Tenders	2	15
Tractors/Loaders/Backhoes	2	15
Graders	1	15
Drainage/Utilities		
Equipment	Number	No. of Days used
Excavators	1	5
Tractors/Loaders/Backhoes	1	5
Dumpers/Tenders	1	5

Paving		
Equipment	Number	No. of Days used
Pavers	1	5
Paving Equipment	3	5
Tractors/Loaders/Backhoes	1	5

Construction Vehicle Trips

Please provide the number **trips** associated with workers, material delivery and hauling during each construction

Construction Phase	worker trips/day	Vendor Truck Trips/day
Grubbing/Land Clearing	5	0
Grading/Excavation	7	0
Drainage/Utilities	4	0
Paving	8	0

In response to RFI	Data assumed

n (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta)

Import Volume (yd^3/day)	Export Volume (yd^3/day)
50.00	50.00
50.00	50.00
20.00	20.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
100.00	0.00

Duration (months)
0.3
0.5
0.5
0.3
1.5

Hrs/day used
6
6
6
6
Hrs/day used
6
6
6
6
Hrs/day used
6
6
6

Hrs/day used
6
6
6

phase

Hauling Truck trips/day
2
2
1
10

Project CalEEMod Inputs Calculation - Dorado Oaks

Trip Generation rate Adjustment Based on Project Traffic Study

Land Use	Units	Weekday Daily Trips	Wkdy daily Trip Rate
Single Family Residential	157	1485	9.46
Multi family Residential	225	1307	5.81
		2792	

Defaults from CalEEMod

CalEEMod Land Use	Wkdy	Sat	Sun
Single Family Housing	9.52	9.91	8.62
Apartments Low Rise	6.59	7.16	6.07

CalEEMod weekday, Sat and Sun trips rates adjusted based on project traffic report

CalEEMod Land Use	Wkday	Sat	Sun
Single Family Housing	9.46	9.85	8.56
Apartments Low Rise	5.81	6.31	5.35

Adjustment for CalGreen Code

CalEEMod Land Use	Default Indoor Water Use (gals/year)	Adjusted Indoor Water Use (less 20%) (gals/year)	
Single Family Housing	10,229,182.02	8183345.616	8183345.616
Apartments Low Rise	14,659,655.76	11727724.61	11727724.61

E

UNCONTROLLED CONSTRUCTION EMISSIONS - Criteria Air Pollutants

Year	No. of Construction Wokdays	Tor		
		ROG	NOx	Exhaust PM_{10}
Subdivision - 2022	165	0.42	4.28	0.17
Subdivision - 2023	260	0.34	2.41	0.09
Subdivision - 2024	262	0.32	2.28	0.08
Subdivision - 2025	261	0.30	2.13	0.07
Subdivision - 2026	134	8.01	0.66	0.02
Subdivision Total	1082	9.38	11.75	0.44
SR-49 Improvements - Option A demolition		0.03	0.29	0.01
SR-49 Improvements - Option A other phases		0.08	0.85	0.04
SR-49 Improvements - Option A Total	99	0.11	1.14	0.05
SR-49 Improvements - Option B Total	77	0.08	0.88	0.04
New EVA Total	33	0.02	0.24	0.01
PROJECT TOTAL - with SR 49 OPTION A	1082	9.5	13.1	0.5
PROJECT TOTAL - with SR 49 OPTION B	1082	9.5	12.9	0.5

OPERATIONAL EMISSIONS - Criteria Air Pollutants

Source	Tons per y			
	ROG	NOx	Exhaust PM_{10}	Fugitive PM_{10}
Area - all propane fireplaces, per applicant	3.31	0.45	0.61	0.00
Energy	0.00	0.00	0.00	0.00
Mobile	0.67	2.17	0.02	2.94
TOTAL	3.98	2.62	0.64	2.94

CONSTRUCTION EMISSIONS - GHG (metric tons)	CO_2	CH_4	N_2O	CO_2e
Subdivision - 2022	755	0.190	0.0	760
Subdivision - 2023	612	0.078	0.0	614
Subdivision - 2024	609	0.078	0.0	611
Subdivision - 2025	600	0.077	0.0	602
Subdivision - 2026	198	0.023	0.0	198
Subdivision Total	2774	0.446	0.0	2785
SR-49 Improvements - Option A demolition	41	0.011	0.0	41
SR-49 Improvements - Option A other phases	187	0.04	0.01	191
SR-49 Improvements - Option A Total	228	0.05	0.01	232
SR-49 Improvements - Option B Total	196	0.04	0.01	200
New EVA Total	52	0.01	0.0	52
PROJECT TOTAL - with SR 49 OPTION A	3054	0.51	0.01	3070
PROJECT TOTAL - with SR 49 OPTION B	3023	0.50	0.01	3038
Life of project (years)				40
Amortized annual emissions with SR 49 Option A (tons/year)				76.7
Amortized annual emissions with SR 49 Option B (tons/year)				76.0

OPERATIONAL EMISSIONS - GHG (metric tons/year)

Operational Source	CO_2	CH_4	N_2O	CO_2e
Area	396.3	0.3704	0.023	412
Energy	344.8	0.0476	0.010	349
Mobile	2497.1	0.0655	0.000	2499

Solid waste	45.0	2.6591	0.000	111
Water & Wastewater	49.8	0.0302	0.017	55
Total Project Operational Emissions	3333.05	3.17	0.05	3427
Service Population				1067
Emissions/Service Population				3.21

EMISSIONS SUMMARIES

ns over Construction Period					Average Pounds per day					
Fugitive PM_{10}	Total PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$	Total $PM_{2.5}$	ROG	NOx	Exhaust PM_{10}	Fugitive PM_{10}	Total PM_{10}	Exhaust $PM_{2.5}$
0.16	0.33	0.16	0.03	0.19	5.1	51.9	2.0	1.9	3.9	1.9
0.26	0.35	0.09	0.07	0.16	2.6	18.5	0.7	2.0	2.7	0.7
0.26	0.34	0.08	0.07	0.15	2.4	17.4	0.6	2.0	2.6	0.6
0.26	0.33	0.07	0.07	0.14	2.3	16.3	0.5	2.0	2.5	0.5
0.05	0.07	0.02	0.01	0.03	119.5	9.8	0.3	0.7	1.0	0.3
0.98	1.42	0.41	0.25	0.66	17.3	21.7	0.8	1.8	2.6	0.8
0.01	0.02	0.01	0.00	0.01						
0.33	0.37	0.03	0.07	0.10						
0.34	0.39	0.04	0.07	0.11	2.2	23.1	1.1	6.8	8.0	0.9
0.16	0.20	0.04	0.04	0.07	2.1	22.9	1.0	4.2	5.2	0.9
0.03	0.04	0.01	0.01	0.02	1.2	14.5	0.6	1.8	2.4	0.6
1.4	1.9	0.5	0.3	0.8	20.8	59.3	2.5	10.5	13.0	2.2
1.2	1.7	0.5	0.3	0.7	20.6	59.1	2.5	7.8	10.2	2.3

ear				Pounds per day						
Total PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$	Total $PM_{2.5}$	ROG	NOx	Exhaust PM_{10}	Fugitive PM_{10}	Total PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$
0.61	0.61	0.00	0.61	18.1	2.5	3.4	0.0	3.4	3.4	0.0
0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.96	0.02	0.79	0.81	3.7	11.9	0.1	16.1	16.2	0.1	4.3
3.58	0.63	0.79	1.42	21.8	14.4	3.5	16.1	19.6	3.5	4.3

Fugitive $PM_{2.5}$	Total $PM_{2.5}$
0.4	2.3
0.5	1.2
0.5	1.1
0.5	1.0
0.2	0.5
0.5	1.2
1.4	2.3
0.9	1.8
0.6	1.2
2.5	4.7
2.0	4.2

Total $PM_{2.5}$
3.4
0.0
4.4
7.8

Dorado Oaks Subdivision

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acrea
City Park	68.70	Acre	68.70
Apartments Low Rise	225.00	Dwelling Unit	18.17
Single Family Housing	157.00	Dwelling Unit	30.02

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	7
Climate Zone	1			**Operational Year**	2
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted based on http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_

Land Use - From Project Description

Construction Phase - Applicant data. Demolition area associated with SR-49 improvement component

Off-road Equipment - Default used

Off-road Equipment - Default used

Off-road Equipment - Default equipment used

Off-road Equipment - Data from applicant

Off-road Equipment - Data from applicant

Off-road Equipment - Data from applicant

Trips and VMT - Building construction and architectural coating trips based on residential component only, default f data

Demolition -

Grading - Site area

Vehicle Trips - Adjusted based on project traffic study

Woodstoves - Default number of fireplaces assumed, all burning propane per applicant

Energy Use - Adjusted for 2019 Title 24 energy consumption rates and to account electricity replacing natural gas

Construction Off-road Equipment Mitigation -

Water And Wastewater - 20% reduction in indorr water use to account for CalGreen code requirement.

Table Name	Column Name	Default Value	Ne
tblConstructionPhase	NumDays	200.00	
tblConstructionPhase	NumDays	120.00	
tblConstructionPhase	NumDays	310.00	
tblConstructionPhase	NumDays	3,100.00	8
tblConstructionPhase	NumDays	220.00	
tblConstructionPhase	NumDays	220.00	
tblEnergyUse	NT24E	3,172.76	3,
tblEnergyUse	NT24E	6,155.97	6,
tblEnergyUse	NT24NG	1,599.00	
tblEnergyUse	NT24NG	1,599.00	
tblEnergyUse	T24E	775.93	3,
tblEnergyUse	T24E	912.41	3,
tblEnergyUse	T24NG	9,200.58	
tblEnergyUse	T24NG	10,517.50	
tblFireplaces	NumberGas	123.75	
tblFireplaces	NumberGas	86.35	
tblFireplaces	NumberPropane	0.00	2
tblFireplaces	NumberPropane	0.00	1
tblFireplaces	NumberWood	78.75	
tblFireplaces	NumberWood	54.95	
tblGrading	AcresOfGrading	318.75	1
tblGrading	AcresOfGrading	102.00	
tblGrading	MaterialImported	0.00	7,
tblLandUse	LotAcreage	14.06	
tblLandUse	LotAcreage	50.97	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	

tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblOffRoadEquipment	UsageHours	8.00	
tblProjectCharacteristics	CO2IntensityFactor	641.35	
tblTripsAndVMT	HaulingTripNumber	0.00	3
tblTripsAndVMT	HaulingTripNumber	988.00	1,
tblTripsAndVMT	HaulingTripNumber	0.00	2,
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	VendorTripNumber	531.00	
tblTripsAndVMT	VendorTripNumber	0.00	
tblTripsAndVMT	WorkerTripNumber	30.00	
tblTripsAndVMT	WorkerTripNumber	68.00	
tblTripsAndVMT	WorkerTripNumber	1,475.00	2
tblTripsAndVMT	WorkerTripNumber	38.00	
tblTripsAndVMT	WorkerTripNumber	295.00	
tblVehicleTrips	ST_TR	7.16	
tblVehicleTrips	ST_TR	22.75	
tblVehicleTrips	ST_TR	9.91	
tblVehicleTrips	SU_TR	6.07	
tblVehicleTrips	SU_TR	16.74	
tblVehicleTrips	SU_TR	8.62	
tblVehicleTrips	WD_TR	6.59	
tblVehicleTrips	WD_TR	1.89	
tblVehicleTrips	WD_TR	9.52	
tblWater	AerobicPercent	87.46	1
tblWater	AerobicPercent	87.46	1
tblWater	AerobicPercent	87.46	1
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	
tblWater	IndoorWaterUseRate	14,659,655.76	11,7
tblWater	IndoorWaterUseRate	10,229,182.02	8,18
tblWater	SepticTankPercent	10.33	

tblWater	SepticTankPercent	10.33	
tblWater	SepticTankPercent	10.33	

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Year	tons/yr											
2022	0.4507	4.5706	3.9437	8.99E-03	0.1649	0.1827	0.3476	0.0314	0.169	0.2004	0	795.52
2023	0.3374	2.4071	3.0032	6.88E-03	0.2588	0.0936	0.3523	0.0697	0.088	0.1577	0	612.306
2024	0.3195	2.2818	2.9506	6.85E-03	0.2608	0.0829	0.3436	0.0702	0.0779	0.1481	0	609.488
2025	0.2983	2.1277	2.8729	6.74E-03	0.2598	0.0713	0.331	0.0699	0.067	0.1369	0	599.813
2026	8.0073	0.6598	0.7388	2.19E-03	0.047	0.0189	0.0659	0.0127	0.0178	0.0306	0	197.589
Maximum	**8.0073**	**4.5706**	**3.9437**	**8.99E-03**	**0.2608**	**0.1827**	**0.3523**	**0.0702**	**0.169**	**0.2004**	**0**	**795.52**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Year	tons/yr											
2022	0.4507	4.5706	3.9437	8.99E-03	0.1649	0.1827	0.3476	0.0314	0.169	0.2004	0	795.526
2023	0.3374	2.4071	3.0032	6.88E-03	0.2588	0.0936	0.3523	0.0697	0.088	0.1577	0	612.306
2024	0.3195	2.2818	2.9506	6.85E-03	0.2608	0.0829	0.3436	0.0702	0.0779	0.1481	0	609.48
2025	0.2983	2.1277	2.8729	6.74E-03	0.2598	0.0713	0.331	0.0699	0.067	0.1369	0	599.813
2026	8.0073	0.6598	0.7388	2.19E-03	0.047	0.0189	0.0659	0.0127	0.0178	0.0306	0	197.589
Maximum	**8.0073**	**4.5706**	**3.9437**	**8.99E-03**	**0.2608**	**0.1827**	**0.3523**	**0.0702**	**0.169**	**0.2004**	**0**	**795.526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG +

1	**5-15-2022**	**8-14-2022**	2.4183	2.4183
2	**8-15-2022**	**11-14-2022**	2.1992	2.1992
3	**11-15-2022**	**2-14-2023**	0.7379	0.7379
4	**2-15-2023**	**5-14-2023**	0.6726	0.6726
5	**5-15-2023**	**8-14-2023**	0.6921	0.6921
6	**8-15-2023**	**11-14-2023**	0.6952	0.6952
7	**11-15-2023**	**2-14-2024**	0.6780	0.6780
8	**2-15-2024**	**5-14-2024**	0.6398	0.6398
9	**5-15-2024**	**8-14-2024**	0.6511	0.6511
10	**8-15-2024**	**11-14-2024**	0.6539	0.6539
11	**11-15-2024**	**2-14-2025**	0.6363	0.6363
12	**2-15-2025**	**5-14-2025**	0.5923	0.5923
13	**5-15-2025**	**8-14-2025**	0.6096	0.6096
14	**8-15-2025**	**11-14-2025**	0.6122	0.6122
15	**11-15-2025**	**2-14-2026**	0.6166	0.6166
16	**2-15-2026**	**5-14-2026**	3.5006	3.5006
17	**5-15-2026**	**8-14-2026**	4.9698	4.9698
		Highest	4.9698	4.9698

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Area	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.216	319.08
Energy	0	0	0	0		0	0		0	0	0	344.827
Mobile	0.6693	2.1725	7.91	0.0274	2.9399	0.0241	2.964	0.7876	0.0224	0.81	0	2,497.1
Waste						0	0		0	0	44.995	0
Water						0	0		0	0	7.0446	42.783
Total	**3.976**	**2.6233**	**14.4873**	**0.0391**	**2.9399**	**0.6359**	**3.5758**	**0.7876**	**0.6342**	**1.4218**	**129.2556**	**3,203.8**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Area	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.216	319.08
Energy	0	0	0	0		0	0		0	0	0	344.827
Mobile	0.6693	2.1725	7.91	0.0274	2.9399	0.0241	2.964	0.7876	0.0224	0.81	0	2,497.1
Waste						0	0		0	0	44.995	0
Water						0	0		0	0	7.0446	42.783
Total	**3.976**	**2.6233**	**14.4873**	**0.0391**	**2.9399**	**0.6359**	**3.5758**	**0.7876**	**0.6342**	**1.4218**	**129.2556**	**3,203.8**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NB
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	5/15/2022	6/14/2022	5	22
2	Site Preparation	Site Preparation	5/15/2022	6/30/2022	5	34
3	Grading	Grading	7/1/2022	10/27/2022	5	85
4	Building Construction	Building Construction	10/28/2022	1/14/2026	5	839
5	Paving	Paving	1/15/2026	4/10/2026	5	62
6	Architectural Coating	Architectural Coating	4/11/2026	7/7/2026	5	62

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 142.5

Acres of Paving: 0

Residential Indoor: 1,027,890; Residential Outdoor: 342,630; Non-Residential Indoor: 0; Non-Residential Ou

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power
Demolition	Concrete/Industrial Saws	1	8.00	81
Demolition	Excavators	3	8.00	158
Demolition	Rubber Tired Dozers	2	8.00	247
Site Preparation	Off-Highway Trucks	4	6.00	402
Site Preparation	Rubber Tired Dozers	0	0.00	247

Site Preparation	Scrapers	4	6.00	367
Site Preparation	Skid Steer Loaders	2	6.00	65
Site Preparation	Tractors/Loaders/Backhoes	2	6.00	97
Grading	Dumpers/Tenders	6	6.00	16
Grading	Excavators	2	6.00	158
Grading	Graders	2	6.00	187
Grading	Off-Highway Tractors	2	6.00	124
Grading	Other Construction Equipment	5	6.00	172
Grading	Rollers	2	6.00	80
Grading	Rubber Tired Dozers	0	0.00	247
Grading	Scrapers	4	6.00	367
Grading	Tractors/Loaders/Backhoes	4	6.00	97
Building Construction	Cranes	1	7.00	231
Building Construction	Forklifts	3	8.00	89
Building Construction	Generator Sets	1	8.00	84
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97
Building Construction	Welders	1	8.00	46
Paving	Dumpers/Tenders	6	6.00	16
Paving	Pavers	1	6.00	130
Paving	Paving Equipment	4	6.00	132
Paving	Plate Compactors	2	6.00	8
Paving	Rollers	2	6.00	80
Architectural Coating	Air Compressors	1	6.00	78

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worke C
Demolition	6	15.00	0.00	60.00	10.80	7.30	20.00	LD_Mix
Site Preparation	12	20.00	4.00	340.00	10.80	7.30	20.00	LD_Mix
Grading	27	40.00	4.00	1,700.00	10.80	7.30	20.00	LD_Mix
Building Construction	9	219.00	41.00	0.00	10.80	7.30	20.00	LD_Mix
Paving	15	20.00	4.00	2,480.00	10.80	7.30	20.00	LD_Mix
Architectural Coating	1	44.00	0.00	0.00	10.80	7.30	20.00	LD_Mix

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO

Category	tons/yr											
Fugitive Dust					6.60E-03	0	6.60E-03	1.00E-03	0	1.00E-03	0	0
Off-Road	0.029	0.2829	0.2265	4.30E-04		0.0137	0.0137		0.0127	0.0127	0	37.3893
Total	**0.029**	**0.2829**	**0.2265**	**4.30E-04**	**6.60E-03**	**0.0137**	**0.0203**	**1.00E-03**	**0.0127**	**0.0137**	**0**	**37.3893**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	2.40E-04	8.78E-03	2.64E-03	2.00E-05	5.00E-04	3.00E-05	5.30E-04	1.40E-04	3.00E-05	1.70E-04	0	2.2808
Vendor	0	0	0	0	0	0	0	0	0	0	0	0
Worker	7.30E-04	4.10E-04	4.53E-03	1.00E-05	1.30E-03	1.00E-05	1.31E-03	3.50E-04	1.00E-05	3.50E-04	0	1.0837
Total	**9.70E-04**	**9.19E-03**	**7.17E-03**	**3.00E-05**	**1.80E-03**	**4.00E-05**	**1.84E-03**	**4.90E-04**	**4.00E-05**	**5.20E-04**	**0**	**3.3646**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					6.6000e-003	0.0000	6.6000e-003	1.0000e-003	0.0000	1.0000e-003	0.0000	0.0000
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3892
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**	**6.6000e-003**	**0.0137**	**0.0203**	**1.0000e-003**	**0.0127**	**0.0137**	**0.0000**	**37.3892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	2.4000e-004	8.7800e-003	2.6400e-003	2.0000e-005	5.0000e-004	3.0000e-005	5.3000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.2808
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	4.1000e-004	4.5300e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.5000e-004	0.0000	1.0837
Total	**9.7000e-004**	**9.1900e-003**	**7.1700e-003**	**3.0000e-005**	**1.8000e-003**	**4.0000e-005**	**1.8400e-003**	**4.9000e-004**	**4.0000e-005**	**5.2000e-004**	**0.0000**	**3.3646**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0	0	0	0	0	0	0	0
Off-Road	0.0747	0.7272	0.5889	1.58E-03		0.0284	0.0284		0.0262	0.0262	0	138.803
Total	**0.0747**	**0.7272**	**0.5889**	**1.58E-03**	**0**	**0.0284**	**0.0284**	**0**	**0.0262**	**0.0262**	**0**	**138.803**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	1.34E-03	0.0498	0.015	1.40E-04	2.82E-03	1.80E-04	3.01E-03	7.70E-04	1.80E-04	9.50E-04	0	12.9248
Vendor	2.20E-04	7.44E-03	2.43E-03	2.00E-05	4.40E-04	2.00E-05	4.60E-04	1.30E-04	2.00E-05	1.50E-04	0	1.7068
Worker	1.50E-03	8.50E-04	9.34E-03	2.00E-05	2.68E-03	2.00E-05	2.70E-03	7.10E-04	2.00E-05	7.30E-04	0	2.2331
Total	**3.06E-03**	**0.0581**	**0.0267**	**1.80E-04**	**5.94E-03**	**2.20E-04**	**6.17E-03**	**1.61E-03**	**2.20E-04**	**1.83E-03**	**0**	**16.8647**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0747	0.7272	0.5889	1.5800e-003		0.0284	0.0284		0.0262	0.0262	0.0000	138.803
Total	**0.0747**	**0.7272**	**0.5889**	**1.5800e-003**	**0.0000**	**0.0284**	**0.0284**	**0.0000**	**0.0262**	**0.0262**	**0.0000**	**138.803**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	1.3400e-003	0.0498	0.0150	1.4000e-004	2.8200e-003	1.8000e-004	3.0100e-003	7.7000e-004	1.8000e-004	9.5000e-004	0.0000	12.9248
Vendor	2.2000e-004	7.4400e-003	2.4300e-003	2.0000e-005	4.4000e-004	2.0000e-005	4.6000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.7068
Worker	1.5000e-003	8.5000e-004	9.3400e-003	2.0000e-005	2.6800e-003	2.0000e-005	2.7000e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.2331
Total	**3.0600e-003**	**0.0581**	**0.0267**	**1.8000e-004**	**5.9400e-003**	**2.2000e-004**	**6.1700e-003**	**1.6100e-003**	**2.2000e-004**	**1.8300e-003**	**0.0000**	**16.8647**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0761	0	0.0761	8.25E-03	0	8.25E-03	0	0
Off-Road	0.2636	2.7466	2.4183	4.68E-03		0.1201	0.1201		0.1108	0.1108	0	409.000
Total	**0.2636**	**2.7466**	**2.4183**	**4.68E-03**	**0.0761**	**0.1201**	**0.1963**	**8.25E-03**	**0.1108**	**0.119**	**0**	**409.000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.70E-03	0.2488	0.0748	6.80E-04	0.0141	9.20E-04	0.0151	3.87E-03	8.80E-04	4.75E-03	0	64.623
Vendor	5.60E-04	0.0186	6.08E-03	5.00E-05	1.10E-03	5.00E-05	1.16E-03	3.20E-04	5.00E-05	3.70E-04	0	4.2669
Worker	7.52E-03	4.24E-03	0.0467	1.20E-04	0.0134	1.00E-04	0.0135	3.56E-03	9.00E-05	3.65E-03	0	11.165
Total	**0.0148**	**0.2717**	**0.1276**	**8.50E-04**	**0.0286**	**1.07E-03**	**0.0297**	**7.75E-03**	**1.02E-03**	**8.77E-03**	**0**	**80.056**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Fugitive Dust					0.0761	0	0.0761	8.25E-03	0	8.25E-03	0	0
Off-Road	0.2636	2.7466	2.4183	4.68E-03		0.1201	0.1201		0.1108	0.1108	0	408.999
Total	**0.2636**	**2.7466**	**2.4183**	**4.68E-03**	**0.0761**	**0.1201**	**0.1963**	**8.25E-03**	**0.1108**	**0.119**	**0**	**408.999**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.7000e-003	0.2488	0.0748	6.8000e-004	0.0141	9.2000e-004	0.0151	3.8700e-003	8.8000e-004	4.7500e-003	0.0000	64.623
Vendor	5.6000e-004	0.0186	6.0800e-003	5.0000e-005	1.1000e-003	5.0000e-005	1.1600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	4.2669
Worker	7.5200e-003	4.2400e-003	0.0467	1.2000e-004	0.0134	1.0000e-004	0.0135	3.5600e-003	9.0000e-005	3.6500e-003	0.0000	11.165

Total	**0.0148**	**0.2717**	**0.1276**	**8.5000e-004**	**0.0286**	**1.0700e-003**	**0.0297**	**7.7500e-003**	**1.0200e-003**	**8.7700e-003**	**0.0000**	**80.0563**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0392	0.3592	0.3764	6.20E-04		0.0186	0.0186		0.0175	0.0175	0	53.2968
Total	**0.0392**	**0.3592**	**0.3764**	**6.20E-04**		**0.0186**	**0.0186**		**0.0175**	**0.0175**	**0**	**53.2968**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	3.08E-03	0.1032	0.0337	2.50E-04	6.13E-03	2.90E-04	6.42E-03	1.77E-03	2.80E-04	2.05E-03	0	23.6685
Worker	0.0223	0.0126	0.1384	3.70E-04	0.0397	2.90E-04	0.04	0.0106	2.70E-04	0.0108	0	33.083
Total	**0.0254**	**0.1158**	**0.1721**	**6.20E-04**	**0.0458**	**5.80E-04**	**0.0464**	**0.0123**	**5.50E-04**	**0.0129**	**0**	**56.7515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0392	0.3592	0.3764	6.2000e-004		0.0186	0.0186		0.0175	0.0175	0.0000	53.2967
Total	**0.0392**	**0.3592**	**0.3764**	**6.2000e-004**		**0.0186**	**0.0186**		**0.0175**	**0.0175**	**0.0000**	**53.2967**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0800e-003	0.1032	0.0337	2.5000e-004	6.1300e-003	2.9000e-004	6.4200e-003	1.7700e-003	2.8000e-004	2.0500e-003	0.0000	23.6685
Worker	0.0223	0.0126	0.1384	3.7000e-004	0.0397	2.9000e-004	0.0400	0.0106	2.7000e-004	0.0108	0.0000	33.0830

Total	**0.0254**	**0.1158**	**0.1721**	**6.2000e-004**	**0.0458**	**5.8000e-004**	**0.0464**	**0.0123**	**5.5000e-004**	**0.0129**	**0.0000**	**56.7515**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.2045	1.87	2.1117	3.50E-03		0.091	0.091		0.0856	0.0856	0	301.346
Total	**0.2045**	**1.87**	**2.1117**	**3.50E-03**		**0.091**	**0.091**		**0.0856**	**0.0856**	**0**	**301.346**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0141	0.4731	0.1765	1.38E-03	0.0346	1.01E-03	0.0356	0.01	9.70E-04	0.011	0	130.899
Worker	0.1188	0.064	0.7149	1.99E-03	0.2241	1.60E-03	0.2257	0.0596	1.47E-03	0.0611	0	180.061
Total	**0.1329**	**0.5371**	**0.8915**	**3.37E-03**	**0.2588**	**2.61E-03**	**0.2614**	**0.0697**	**2.44E-03**	**0.0721**	**0**	**310.960**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.345
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0141	0.4731	0.1765	1.3800e-003	0.0346	1.0100e-003	0.0356	0.0100	9.7000e-004	0.0110	0.0000	130.899
Worker	0.1188	0.0640	0.7149	1.9900e-003	0.2241	1.6000e-003	0.2257	0.0596	1.4700e-003	0.0611	0.0000	180.061

Total	**0.1329**	**0.5371**	**0.8915**	**3.3700e-003**	**0.2588**	**2.6100e-003**	**0.2614**	**0.0697**	**2.4400e-003**	**0.0721**	**0.0000**	**310.960**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1928	1.7611	2.1179	3.53E-03		0.0803	0.0803		0.0756	0.0756	0	303.722
Total	**0.1928**	**1.7611**	**2.1179**	**3.53E-03**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0**	**303.722**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0136	0.4624	0.1687	1.39E-03	0.0349	9.50E-04	0.0359	0.0101	9.10E-04	0.011	0	131.264
Worker	0.1131	0.0583	0.664	1.93E-03	0.2259	1.57E-03	0.2274	0.0601	1.44E-03	0.0615	0	174.501
Total	**0.1267**	**0.5207**	**0.8328**	**3.32E-03**	**0.2608**	**2.52E-03**	**0.2633**	**0.0702**	**2.35E-03**	**0.0725**	**0**	**305.766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.722
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.722**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0136	0.4624	0.1687	1.3900e-003	0.0349	9.5000e-004	0.0359	0.0101	9.1000e-004	0.0110	0.0000	131.264
Worker	0.1131	0.0583	0.6640	1.9300e-003	0.2259	1.5700e-003	0.2274	0.0601	1.4400e-003	0.0615	0.0000	174.501

Total	**0.1267**	**0.5207**	**0.8328**	**3.3200e-003**	**0.2608**	**2.5200e-003**	**0.2633**	**0.0702**	**2.3500e-003**	**0.0725**	**0.0000**	**305.766**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1785	1.6273	2.0991	3.52E-03		0.0689	0.0689		0.0648	0.0648	0	302.654
Total	**0.1785**	**1.6273**	**2.0991**	**3.52E-03**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0**	**302.654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0131	0.4478	0.1626	1.37E-03	0.0348	8.80E-04	0.0357	0.0101	8.50E-04	0.0109	0	130.167
Worker	0.1068	0.0526	0.6113	1.85E-03	0.225	1.52E-03	0.2265	0.0599	1.40E-03	0.0613	0	166.991
Total	**0.1198**	**0.5004**	**0.7738**	**3.22E-03**	**0.2598**	**2.40E-03**	**0.2622**	**0.0699**	**2.25E-03**	**0.0722**	**0**	**297.158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.654
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0131	0.4478	0.1626	1.3700e-003	0.0348	8.8000e-004	0.0357	0.0101	8.5000e-004	0.0109	0.0000	130.167
Worker	0.1068	0.0526	0.6113	1.8500e-003	0.2250	1.5200e-003	0.2265	0.0599	1.4000e-003	0.0613	0.0000	166.991

Total	**0.1198**	**0.5004**	**0.7738**	**3.2200e-003**	**0.2598**	**2.4000e-003**	**0.2622**	**0.0699**	**2.2500e-003**	**0.0722**	**0.0000**	**297.158**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	6.84E-03	0.0624	0.0804	1.30E-04		2.64E-03	2.64E-03		2.48E-03	2.48E-03	0	11.596
Total	**6.84E-03**	**0.0624**	**0.0804**	**1.30E-04**		**2.64E-03**	**2.64E-03**		**2.48E-03**	**2.48E-03**	**0**	**11.596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	4.80E-04	0.0167	6.05E-03	5.00E-05	1.33E-03	3.00E-05	1.36E-03	3.80E-04	3.00E-05	4.20E-04	0	4.9668
Worker	3.87E-03	1.84E-03	0.0217	7.00E-05	8.62E-03	6.00E-05	8.68E-03	2.29E-03	5.00E-05	2.35E-03	0	6.1645
Total	**4.35E-03**	**0.0185**	**0.0278**	**1.20E-04**	**9.95E-03**	**9.00E-05**	**0.01**	**2.67E-03**	**8.00E-05**	**2.77E-03**	**0**	**11.1313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	6.8400e-003	0.0624	0.0804	1.3000e-004		2.6400e-003	2.6400e-003		2.4800e-003	2.4800e-003	0.0000	11.596
Total	**6.8400e-003**	**0.0624**	**0.0804**	**1.3000e-004**		**2.6400e-003**	**2.6400e-003**		**2.4800e-003**	**2.4800e-003**	**0.0000**	**11.596**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0167	6.0500e-003	5.0000e-005	1.3300e-003	3.0000e-005	1.3600e-003	3.8000e-004	3.0000e-005	4.2000e-004	0.0000	4.9668
Worker	3.8700e-003	1.8400e-003	0.0217	7.0000e-005	8.6200e-003	6.0000e-005	8.6800e-003	2.2900e-003	5.0000e-005	2.3500e-003	0.0000	6.1645

Total	**4.3500e-003**	**0.0185**	**0.0278**	**1.2000e-004**	**9.9500e-003**	**9.0000e-005**	**0.0100**	**2.6700e-003**	**8.0000e-005**	**2.7700e-003**	**0.0000**	**11.1313**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0362	0.298	0.4348	7.40E-04		0.0138	0.0138		0.0129	0.0129	0	62.7486
Paving	0					0	0		0	0	0	0
Total	**0.0362**	**0.298**	**0.4348**	**7.40E-04**		**0.0138**	**0.0138**		**0.0129**	**0.0129**	**0**	**62.7486**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.90E-03	0.232	0.0967	9.50E-04	0.0206	6.80E-04	0.0213	5.65E-03	6.50E-04	6.30E-03	0	90.0245
Vendor	2.90E-04	0.0101	3.66E-03	3.00E-05	8.10E-04	2.00E-05	8.20E-04	2.30E-04	2.00E-05	2.50E-04	0	3.0043
Worker	2.19E-03	1.04E-03	0.0123	4.00E-05	4.88E-03	3.00E-05	4.91E-03	1.30E-03	3.00E-05	1.33E-03	0	3.4904
Total	**9.38E-03**	**0.2431**	**0.1126**	**1.02E-03**	**0.0263**	**7.30E-04**	**0.027**	**7.18E-03**	**7.00E-04**	**7.88E-03**	**0**	**96.5193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Off-Road	0.0362	0.2980	0.4348	7.4000e-004		0.0138	0.0138		0.0129	0.0129	0.0000	62.7485
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Total	**0.0362**	**0.2980**	**0.4348**	**7.4000e-004**		**0.0138**	**0.0138**		**0.0129**	**0.0129**	**0.0000**	**62.7485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	6.9000e-003	0.2320	0.0967	9.5000e-004	0.0206	6.8000e-004	0.0213	5.6500e-003	6.5000e-004	6.3000e-003	0.0000	90.0245
Vendor	2.9000e-004	0.0101	3.6600e-003	3.0000e-005	8.1000e-004	2.0000e-005	8.2000e-004	2.3000e-004	2.0000e-005	2.5000e-004	0.0000	3.0043

Worker	2.1900e-003	1.0400e-003	0.0123	4.0000e-005	4.8800e-003	3.0000e-005	4.9100e-003	1.3000e-003	3.0000e-005	1.3300e-003	0.0000	3.4904
Total	**9.3800e-003**	**0.2431**	**0.1126**	**1.0200e-003**	**0.0263**	**7.3000e-004**	**0.0270**	**7.1800e-003**	**7.0000e-004**	**7.8800e-003**	**0.0000**	**96.5193**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Archit. Coating	7.9405					0	0		0	0	0	0
Off-Road	5.30E-03	0.0355	0.0561	9.00E-05		1.60E-03	1.60E-03		1.60E-03	1.60E-03	0	7.9151
Total	**7.9458**	**0.0355**	**0.0561**	**9.00E-05**		**1.60E-03**	**1.60E-03**		**1.60E-03**	**1.60E-03**	**0**	**7.9151**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Hauling	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0	0	0	0	0	0	0	0	0	0	0	0
Worker	4.83E-03	2.29E-03	0.0271	8.00E-05	0.0107	7.00E-05	0.0108	2.86E-03	6.00E-05	2.92E-03	0	7.6789
Total	**4.83E-03**	**2.29E-03**	**0.0271**	**8.00E-05**	**0.0107**	**7.00E-05**	**0.0108**	**2.86E-03**	**6.00E-05**	**2.92E-03**	**0**	**7.6789**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Archit. Coating	7.9405					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-003	0.0355	0.0561	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	7.9151
Total	**7.9458**	**0.0355**	**0.0561**	**9.0000e-005**		**1.6000e-003**	**1.6000e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**7.9151**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8300e-003	2.2900e-003	0.0271	8.0000e-005	0.0107	7.0000e-005	0.0108	2.8600e-003	6.0000e-005	2.9200e-003	0.0000	7.6789
Total	**4.8300e-003**	**2.2900e-003**	**0.0271**	**8.0000e-005**	**0.0107**	**7.0000e-005**	**0.0108**	**2.8600e-003**	**6.0000e-005**	**2.9200e-003**	**0.0000**	**7.6789**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Mitigated	0.6693	2.1725	7.9100	0.0274	2.9399	0.0241	2.9640	0.7876	0.0224	0.8100	0.0000	2,497.106
Unmitigated	0.6693	2.1725	7.9100	0.0274	2.9399	0.0241	2.9640	0.7876	0.0224	0.8100	0.0000	2,497.106

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT
Apartments Low Rise	1,307.25	1,419.75	1203.75	3,748,356
City Park	0.00	0.00	0.00	
Single Family Housing	1,485.22	1,546.45	1343.92	4,221,710
Total	2,792.47	2,966.20	2,547.67	7,970,066

4.3 Trip Type Information

	Miles			Trip %			T
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	D
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS
Apartments Low Rise	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627
City Park	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627
Single Family Housing	0.557019	0.034577	0.225137	0.122292	0.020027	0.004692	0.017649	0.009477	0.001627

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO
Category	tons/yr											
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.827
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.827
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2
Land Use	kBTU/yr	tons/yr										
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2
Land Use	kBTU/yr	tons/yr										
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.77E+06	168.3454	0.0233	4.81E-03	170.36
City Park	0	0	0	0	0

Single Family Housing	1.85E+06	176.4819	0.0244	5.04E-03	178.5938
Total		**344.8273**	**0.0476**	**9.85E-03**	**348.9537**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.76732e+006	168.3454	0.0233	4.8100e-003	170.3600
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.85274e+006	176.4819	0.0244	5.0400e-003	178.5938
Total		**344.8273**	**0.0476**	**9.8500e-003**	**348.9537**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
Category	tons/yr											
Mitigated	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.2160	319.081
Unmitigated	3.3067	0.4508	6.5773	0.0117		0.6118	0.6118		0.6118	0.6118	77.2160	319.081

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C
SubCategory	tons/yr											
Architectural Coating	0.7941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0106					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Hearth	0.4170	0.4182	3.7429	0.0115		0.5961	0.5961		0.5961	0.5961	77.2160	314.446
Landscaping	0.0851	0.0327	2.8343	1.5000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	4.6344
Total	**3.3067**	**0.4508**	**6.5773**	**0.0117**		**0.6118**	**0.6118**		**0.6118**	**0.6118**	**77.2160**	**319.081**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- C

SubCategory	tons/yr											
Architectural Coating	0.7941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0106					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Hearth	0.4170	0.4182	3.7429	0.0115		0.5961	0.5961		0.5961	0.5961	77.2160	314.446
Landscaping	0.0851	0.0327	2.8343	1.5000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	4.6344
Total	**3.3067**	**0.4508**	**6.5773**	**0.0117**		**0.6118**	**0.6118**		**0.6118**	**0.6118**	**77.2160**	**319.081**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	49.8279	0.0302	0.0165	55.5113
Unmitigated	49.8279	0.0302	0.0165	55.5113

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.7277 / 9.24196	13.2752	0.0155	9.2800e-003	16.4304
City Park	0 / 81.8548	27.2896	3.7700e-003	7.8000e-004	27.6162
Single Family Housing	8.18335 / 6.44883	9.2631	0.0108	6.4800e-003	11.4648
Total		**49.8279**	**0.0302**	**0.0165**	**55.5113**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.7277 / 9.24196	13.2752	0.0155	9.2800e-003	16.4304
City Park	0 / 81.8548	27.2896	3.7700e-003	7.8000e-004	27.6162
Single Family Housing	8.18335 / 6.44883	9.2631	0.0108	6.4800e-003	11.4648
Total		**49.8279**	**0.0302**	**0.0165**	**55.5113**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	44.9950	2.6591	0.0000	111.4732
Unmitigated	44.9950	2.6591	0.0000	111.4732

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.5	21.0096	1.2416	0.0000	52.0503
City Park	5.91	1.1997	0.0709	0.0000	2.9722
Single Family Housing	112.25	22.7857	1.3466	0.0000	56.4507
Total		**44.9950**	**2.6591**	**0.0000**	**111.4732**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.5	21.0096	1.2416	0.0000	52.0503
City Park	5.91	1.1997	0.0709	0.0000	2.9722
Single Family Housing	112.25	22.7857	1.3466	0.0000	56.4507
Total		**44.9950**	**2.6591**	**0.0000**	**111.4732**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Date: 9/1/2020 2:04 PM

ıl

age	Floor Surface Area	Population
	2,992,572.00	0
	225,000.00	644
	282,600.00	449

0

027

_CRSR_2019.pdf

or demolition, others based on applicant

w Value
22.00
34.00
35.00
39.00
52.00
52.00
641.40
624.61
0.00
0.00
403.02
567.46
0.00
0.00
0.00
0.00
02.50
.41.30
0.00
0.00
.42.50
0.00
900.00
18.17
30.02
2.00
1.00
4.00
0.00
0.00
4.00
4.00
2.00
6.00
6.00

6.00

6.00

6.00

0.00

0.00

6.00

6.00

6.00

210

40.00

700.00

480.00

4.00

4.00

41.00

4.00

20.00

40.00

19.00

20.00

44.00

6.31

0.00

9.85

5.35

0.00

8.56

5.81

0.00

9.46

.00.00

.00.00

.00.00

0.00

0.00

0.00

27,724.61

3,345.62

0.00

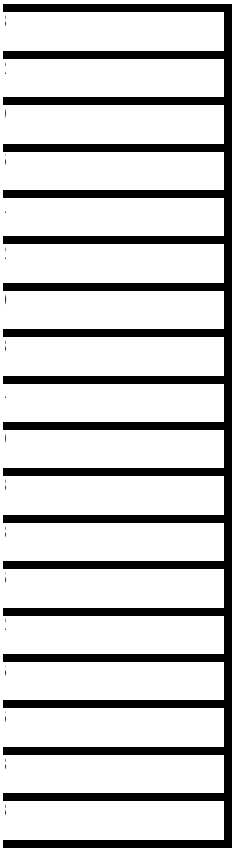
0.00
0.00

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
7	795.527	0.2009	0	800.5481
64	612.3064	0.0782	0	614.2606
63	609.4883	0.0778	0	611.4321
65	599.8135	0.0766	0	601.7276
02	197.5892	0.0227	0	198.1566
7	**795.527**	**0.2009**	**0**	**800.5481**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
62	795.5262	0.2009	0	800.5473
61	612.3061	0.0782	0	614.2602
8	609.488	0.0778	0	611.4318
61	599.8131	0.0766	0	601.7273
01	197.5891	0.0227	0	198.1565
62	**795.5262**	**0.2009**	**0**	**800.5473**

2	**Total CO2**	**CH4**	**N20**	**CO2e**
	0.00	**0.00**	**0.00**	**0.00**

NOX (tons/quarter)



O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
1	396.297	0.3704	0.0226	412.3048
'3	344.8273	0.0476	9.85E-03	348.9537
1	2,497.11	0.0655	0	2,498.74
	44.995	2.6591	0	111.4732
4	49.8279	0.0302	0.0165	55.5113
0	**3,333.05**	**3.1728**	**0.049**	**3,426.99**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
1	396.297	0.3704	0.0226	412.3048
'3	344.8273	0.0476	9.85E-03	348.9537
1	2,497.11	0.0655	0	2,498.74
	44.995	2.6591	0	111.4732
4	49.8279	0.0302	0.0165	55.5113
0	**3,333.05**	**3.1728**	**0.049**	**3,426.99**

ıio-CO2	**Total CO2**	**CH4**	**N20**	**CO2e**
0.00	**0.00**	**0.00**	**0.00**	**0.00**

Phase Description

ıtdoor: 0; Striped Parking Area:

Load Factor
0.73
0.38
0.40
0.38
0.40

0.48
0.37
0.37
0.38
0.38
0.41
0.44
0.42
0.38
0.40
0.48
0.37
0.29
0.20
0.74
0.37
0.45
0.38
0.42
0.36
0.43
0.38
0.48

er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT
	HDT_Mix	HHDT

O2	Total CO2	CH4	N2O	CO2e

		MT/yr		
	0	0	0	0
3	37.3893	0.0105	0	37.6518
3	**37.3893**	**0.0105**	**0**	**37.6518**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	2.2808	3.00E-05	0	2.2815
	0	0	0	0
	1.0837	3.00E-05	0	1.0845
	3.3646	**6.00E-05**	**0**	**3.3659**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	0.0000	0.0000	0.0000	0.0000
2	37.3892	0.0105	0.0000	37.6518
2	**37.3892**	**0.0105**	**0.0000**	**37.6518**

02	Total CO2	CH4	N2O	CO2e
		MT/yr		
	2.2808	3.0000e-005	0.0000	2.2815
	0.0000	0.0000	0.0000	0.0000
	1.0837	3.0000e-005	0.0000	1.0845
	3.3646	**6.0000e-005**	**0.0000**	**3.3659**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
6	138.8036	0.0449	0	139.9259
6	**138.8036**	**0.0449**	**0**	**139.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	12.9248	1.40E-04	0	12.9284
	1.7068	3.00E-05	0	1.7075
	2.2331	6.00E-05	0	2.2347
7	**16.8647**	**2.30E-04**	**0**	**16.8705**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	138.8035	0.0449	0.0000	139.9258
5	**138.8035**	**0.0449**	**0.0000**	**139.9258**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	12.9248	1.4000e-004	0.0000	12.9284
	1.7068	3.0000e-005	0.0000	1.7075
	2.2331	6.0000e-005	0.0000	2.2347
7	**16.8647**	**2.3000e-004**	**0.0000**	**16.8705**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
2	409.0002	0.13	0	412.25
2	**409.0002**	**0.13**	**0**	**412.25**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	64.6239	7.20E-04	0	64.6419
	4.2669	7.00E-05	0	4.2686
5	11.1656	3.10E-04	0	11.1733
3	**80.0563**	**1.10E-03**	**0**	**80.0838**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
7	408.9997	0.13	0	412.2495
7	**408.9997**	**0.13**	**0**	**412.2495**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	64.6239	7.2000e-004	0.0000	64.6419
	4.2669	7.0000e-005	0.0000	4.2686
5	11.1656	3.1000e-004	0.0000	11.1733

3	**80.0563**	**1.1000e-003**	**0.0000**	**80.0838**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	53.2968	0.0128	0	53.616
3	**53.2968**	**0.0128**	**0**	**53.616**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
5	23.6685	3.90E-04	0	23.6784
	33.083	9.10E-04	0	33.1057
5	**56.7515**	**1.30E-03**	**0**	**56.7841**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
7	53.2967	0.0128	0.0000	53.6160
7	**53.2967**	**0.0128**	**0.0000**	**53.6160**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	23.6685	3.9000e-004	0.0000	23.6784
0	33.0830	9.1000e-004	0.0000	33.1057

5	**56.7515**	**1.3000e-003**	**0.0000**	**56.7841**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
2	301.3462	0.0717	0	303.1383
2	**301.3462**	**0.0717**	**0**	**303.1383**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
2	130.8992	1.90E-03	0	130.9467
1	180.0611	4.58E-03	0	180.1756
3	**310.9603**	**6.48E-03**	**0**	**311.1223**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
8	301.3458	0.0717	0.0000	303.1380
8	**301.3458**	**0.0717**	**0.0000**	**303.1380**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
2	130.8992	1.9000e-003	0.0000	130.9467
1	180.0611	4.5800e-003	0.0000	180.1756

3	**310.9603**	**6.4800e-003**	**0.0000**	**311.1223**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	303.7223	0.0718	0	305.5179
3	**303.7223**	**0.0718**	**0**	**305.5179**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
5	131.2645	1.79E-03	0	131.3092
5	174.5015	4.14E-03	0	174.605
5	**305.766**	**5.93E-03**	**0**	**305.9142**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
0	303.7220	0.0718	0.0000	305.5175
0	**303.7220**	**0.0718**	**0.0000**	**305.5175**

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
5	131.2645	1.7900e-003	0.0000	131.3092
5	174.5015	4.1400e-003	0.0000	174.6050

0	**305.7660**	**5.9300e-003**	**0.0000**	**305.9142**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
9	302.6549	0.0711	0	304.4335
9	**302.6549**	**0.0711**	**0**	**304.4335**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
4	130.1674	1.70E-03	0	130.2098
2	166.9912	3.72E-03	0	167.0843
6	**297.1586**	**5.42E-03**	**0**	**297.2941**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	302.6545	0.0711	0.0000	304.4331
5	**302.6545**	**0.0711**	**0.0000**	**304.4331**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
4	130.1674	1.7000e-003	0.0000	130.2098
2	166.9912	3.7200e-003	0.0000	167.0843

6	**297.1586**	**5.4200e-003**	**0.0000**	**297.2941**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	11.596	2.73E-03	0	11.6641
	11.596	**2.73E-03**	**0**	**11.6641**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	4.9668	6.00E-05	0	4.9684
	6.1645	1.30E-04	0	6.1678
3	**11.1313**	**1.90E-04**	**0**	**11.1361**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	11.5960	2.7300e-003	0.0000	11.6641
)	**11.5960**	**2.7300e-003**	**0.0000**	**11.6641**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
	4.9668	6.0000e-005	0.0000	4.9684
	6.1645	1.3000e-004	0.0000	6.1678

3	**11.1313**	**1.9000e-004**	**0.0000**	**11.1361**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	62.7486	0.0183	0	63.2063
	0	0	0	0
5	**62.7486**	**0.0183**	**0**	**63.2063**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	90.0245	7.70E-04	0	90.0437
	3.0043	4.00E-05	0	3.0053
	3.4904	7.00E-05	0	3.4923
3	**96.5193**	**8.80E-04**	**0**	**96.5412**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	62.7485	0.0183	0.0000	63.2062
	0.0000	0.0000	0.0000	0.0000
5	**62.7485**	**0.0183**	**0.0000**	**63.2062**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
5	90.0245	7.7000e-004	0.0000	90.0437
	3.0043	4.0000e-005	0.0000	3.0053

	3.4904	7.0000e-005	0.0000	3.4923
3	**96.5193**	**8.8000e-004**	**0.0000**	**96.5412**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	7.9151	4.30E-04	0	7.9259
	7.9151	**4.30E-04**	**0**	**7.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0	0	0	0
	0	0	0	0
	7.6789	1.60E-04	0	7.683
	7.6789	**1.60E-04**	**0**	**7.683**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
	0.0000	0.0000	0.0000	0.0000
	7.9151	4.3000e-004	0.0000	7.9259
	7.9151	**4.3000e-004**	**0.0000**	**7.9259**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			

	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000
	7.6789	1.6000e-004	0.0000	7.6830
	7.6789	**1.6000e-004**	**0.0000**	**7.6830**

)2	Total CO2	CH4	N2O	CO2e
	MT/yr			
)7	2,497.1076	0.0655	0.0000	2,498.7447
)7	2,497.1076	0.0655	0.0000	2,498.7447

Mitigated
Annual VMT
3,748,356
4,221,710
7,970,066

rip Purpose %	
)iverted	Pass-by
11	3
28	6
11	3

UBUS	MCY	SBUS	MH
0.000999	0.004800	0.000764	0.000939
0.000999	0.004800	0.000764	0.000939
0.000999	0.004800	0.000764	0.000939

02	Total CO2	CH4	N2O	CO2e
	MT/yr			
3	344.8273	0.0476	9.8500e-003	348.9537
3	344.8273	0.0476	9.8500e-003	348.9537
	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000

2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		MT/yr			
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		MT/yr			
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	**0.0000**	**0.0000**	**0.0000**	**0.0000**

O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
.0	396.2970	0.3704	0.0226	412.3048
.0	396.2970	0.3704	0.0226	412.3048

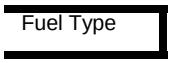
O2	Total CO2	CH4	N2O	CO2e
	MT/yr			
)	0.0000	0.0000	0.0000	0.0000
)	0.0000	0.0000	0.0000	0.0000
36	391.6626	0.3660	0.0226	407.5594
4	4.6344	4.4400e-003	0.0000	4.7454
.0	**396.2970**	**0.3704**	**0.0226**	**412.3048**

O2	Total CO2	CH4	N2O	CO2e

	MT/yr			
)	0.0000	0.0000	0.0000	0.0000
)	0.0000	0.0000	0.0000	0.0000
36	391.6626	0.3660	0.0226	407.5594
ł	4.6344	4.4400e-003	0.0000	4.7454
.0	**396.2970**	**0.3704**	**0.0226**	**412.3048**

Load Factor	Fuel Type


Load Factor
Fuel Type


Fuel Type

Dorado Oaks Construction - Health Risk Assessment

Residential Cancer Risk & hazard Index Calculations

Component/Year	Start Date	End Date	Calendar Days	3rd Trimester
Subdivision - 2022	5/15/2022	12/31/2022	230	91
Subdivision - 2023	1/1/2023	12/31/2023	365	0
Subdivision - 2024	1/1/2024	12/31/2024	365	0
Subdivision - 2025	1/1/2025	12/31/2025	365	0
Subdivision - 2026	1/1/2026	7/7/2026	187	0
SR 49 - 2022	5/15/2022	9/30/2022	138	91
Fowler Lane - 2022	6/30/2022	7/31/2022	31	31

Cancer Risk Factors

	Abbreviation	UOM	3rd Trimester
Daily Breathing Rate (95th %'ile)	DBR	L/kg-day	361
Fraction Of Time At Home	FAH	unitless	1
Exposure Frequency	EF	days/year	0.96
Age Sensitivity Factor	ASF	unitless	10
Inhalation Absorption Factor	A	unitless	1
Conversion Factor	CF_1	m^3/L	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001
Cancer Potency Factor (diesel exhaust)	CPF	$mg/kg\text{-}day^{-1}$	1.1
Averaging Time (for residential exposure)	AT	years	70.00

Hazard Index

Chronic Inhalation	REL	$\mu g/m^3$	5

Intake Factor for Inhalation, IF (m^3/kg-day) = DBR*FAH*EF*ED*ASF*A*CF/AT

Component/Year	3rd Trimester	0<2	2<9
Subdivision - 2022	0.012	0.057	0.000
Subdivision - 2023	0.000	0.149	0.000
Subdivision - 2024	0.000	0.092	0.013
Subdivision - 2025	0.000	0.000	0.035
Subdivision - 2026	0.000	0.000	0.018
SR 49 - 2022	0.012	0.019	0.000
Fowler Lane - 2022	0.004	0.000	0.000

	Cancer Risk	UTM X	UTM Y
MAX	9.26	689712.61	4284806.28

Diesel Particulate Matter concentration, C_{DPM} ($\mu g/m^3$)

				P
		PAREA1	PAREA1	PAREA1
X (UTM)	Y (UTM)	2022	2023	2024
689212.05	4283551.57	0.004	0.002	0.001
689262.05	4283551.57	0.005	0.002	0.002

689312.05	4283551.57	0.006	0.002	0.002
689362.05	4283551.57	0.008	0.003	0.002
689412.05	4283551.57	0.010	0.003	0.003
689212.05	4283601.57	0.005	0.002	0.001
689262.05	4283601.57	0.005	0.002	0.002
689312.05	4283601.57	0.006	0.002	0.002
689362.05	4283601.57	0.008	0.003	0.002
689412.05	4283601.57	0.010	0.004	0.003
689262.05	4283651.57	0.006	0.002	0.002
689312.05	4283651.57	0.007	0.002	0.002
689362.05	4283651.57	0.008	0.003	0.003
689412.05	4283651.57	0.011	0.004	0.003
689212.05	4283701.57	0.005	0.002	0.002
689262.05	4283701.57	0.006	0.002	0.002
689312.05	4283701.57	0.007	0.003	0.002
689362.05	4283701.57	0.009	0.003	0.003
689412.05	4283701.57	0.012	0.004	0.004
689062.05	4283751.57	0.003	0.001	0.001
689212.05	4283751.57	0.005	0.002	0.002
689262.05	4283751.57	0.006	0.002	0.002
689312.05	4283751.57	0.007	0.003	0.002
689362.05	4283751.57	0.010	0.003	0.003
689262.05	4283801.57	0.006	0.002	0.002
689312.05	4283801.57	0.008	0.003	0.002
689362.05	4283801.57	0.010	0.004	0.003
689412.05	4283801.57	0.015	0.005	0.005
689212.05	4283851.57	0.006	0.002	0.002
689262.05	4283851.57	0.007	0.002	0.002
689312.05	4283851.57	0.008	0.003	0.003
689362.05	4283851.57	0.011	0.004	0.003
689412.05	4283851.57	0.016	0.005	0.005
689062.05	4283901.57	0.004	0.001	0.001
689112.05	4283901.57	0.004	0.002	0.001
689162.05	4283901.57	0.005	0.002	0.002
689212.05	4283901.57	0.006	0.002	0.002
689262.05	4283901.57	0.007	0.002	0.002
689312.05	4283901.57	0.009	0.003	0.003
689362.05	4283901.57	0.011	0.004	0.004
689412.05	4283901.57	0.017	0.006	0.005
689062.05	4283951.57	0.004	0.001	0.001
689112.05	4283951.57	0.005	0.002	0.001
689162.05	4283951.57	0.005	0.002	0.002
689212.05	4283951.57	0.006	0.002	0.002
689262.05	4283951.57	0.007	0.003	0.002
689312.05	4283951.57	0.009	0.003	0.003
689362.05	4283951.57	0.012	0.004	0.004
689412.05	4283951.57	0.018	0.006	0.005

689062.05	4284001.57	0.004	0.001	0.001
689112.05	4284001.57	0.005	0.002	0.001
689162.05	4284001.57	0.005	0.002	0.002
689212.05	4284001.57	0.006	0.002	0.002
689262.05	4284001.57	0.008	0.003	0.002
689312.05	4284001.57	0.010	0.003	0.003
689362.05	4284001.57	0.013	0.004	0.004
689412.05	4284001.57	0.019	0.006	0.006
689062.05	4284051.57	0.004	0.001	0.001
689112.05	4284051.57	0.005	0.002	0.001
689162.05	4284051.57	0.006	0.002	0.002
689212.05	4284051.57	0.007	0.002	0.002
689262.05	4284051.57	0.008	0.003	0.002
689312.05	4284051.57	0.010	0.004	0.003
689362.05	4284051.57	0.013	0.005	0.004
689412.05	4284051.57	0.020	0.007	0.006
689112.05	4284101.57	0.005	0.002	0.002
689162.05	4284101.57	0.006	0.002	0.002
689212.05	4284101.57	0.007	0.002	0.002
689262.05	4284101.57	0.008	0.003	0.003
689312.05	4284101.57	0.010	0.004	0.003
689362.05	4284101.57	0.014	0.005	0.004
689412.05	4284101.57	0.022	0.008	0.007
689162.05	4284151.57	0.006	0.002	0.002
689212.05	4284151.57	0.007	0.002	0.002
689262.05	4284151.57	0.009	0.003	0.003
689312.05	4284151.57	0.011	0.004	0.003
689362.05	4284151.57	0.014	0.005	0.004
689412.05	4284151.57	0.025	0.009	0.008
689212.05	4284201.57	0.007	0.003	0.002
689262.05	4284201.57	0.009	0.003	0.003
689312.05	4284201.57	0.011	0.004	0.003
689362.05	4284201.57	0.017	0.006	0.005
689412.05	4284201.57	0.029	0.010	0.009
689262.05	4284251.57	0.009	0.003	0.003
689312.05	4284251.57	0.012	0.004	0.004
689062.05	4284301.57	0.004	0.002	0.001
689112.05	4284301.57	0.005	0.002	0.002
689162.05	4284301.57	0.006	0.002	0.002
689062.05	4284451.57	0.004	0.002	0.001
689062.05	4284501.57	0.004	0.002	0.001
689112.05	4284501.57	0.005	0.002	0.002
689062.05	4284551.57	0.005	0.002	0.001
689112.05	4284551.57	0.005	0.002	0.002
689162.05	4284551.57	0.006	0.002	0.002
689969.65	4283460.34	0.025	0.009	0.008
690019.65	4283460.34	0.017	0.006	0.005

690069.65	4283460.34	0.013	0.004	0.004
690119.65	4283460.34	0.011	0.004	0.003
690169.65	4283460.34	0.009	0.003	0.003
690219.65	4283460.34	0.008	0.003	0.002
689969.65	4283510.34	0.024	0.008	0.008
690019.65	4283510.34	0.017	0.006	0.005
690069.65	4283510.34	0.013	0.005	0.004
690119.65	4283510.34	0.011	0.004	0.003
690169.65	4283510.34	0.009	0.003	0.003
690219.65	4283510.34	0.008	0.003	0.002
689919.65	4283560.34	0.036	0.012	0.011
689969.65	4283560.34	0.023	0.008	0.007
690019.65	4283560.34	0.017	0.006	0.005
690069.65	4283560.34	0.014	0.005	0.004
690119.65	4283560.34	0.011	0.004	0.003
690169.65	4283560.34	0.009	0.003	0.003
690219.65	4283560.34	0.008	0.003	0.002
689919.65	4283610.34	0.032	0.011	0.010
689969.65	4283610.34	0.023	0.008	0.007
690019.65	4283610.34	0.017	0.006	0.005
690069.65	4283610.34	0.014	0.005	0.004
690119.65	4283610.34	0.012	0.004	0.004
690169.65	4283610.34	0.010	0.003	0.003
690219.65	4283610.34	0.008	0.003	0.002
689919.65	4283660.34	0.031	0.011	0.010
689969.65	4283660.34	0.022	0.008	0.007
690019.65	4283660.34	0.018	0.006	0.005
690069.65	4283660.34	0.015	0.005	0.005
690119.65	4283660.34	0.012	0.004	0.004
690169.65	4283660.34	0.009	0.003	0.003
690219.65	4283660.34	0.008	0.003	0.002
689869.65	4283710.34	0.050	0.017	0.015
689919.65	4283710.34	0.030	0.010	0.009
689969.65	4283710.34	0.022	0.008	0.007
690019.65	4283710.34	0.018	0.006	0.006
690069.65	4283710.34	0.015	0.005	0.005
690119.65	4283710.34	0.012	0.004	0.004
690169.65	4283710.34	0.009	0.003	0.003
690219.65	4283710.34	0.008	0.003	0.002
689919.65	4283760.34	0.029	0.010	0.009
689969.65	4283760.34	0.022	0.008	0.007
690019.65	4283760.34	0.018	0.006	0.005
690069.65	4283760.34	0.014	0.005	0.004
690119.65	4283760.34	0.011	0.004	0.004
690169.65	4283760.34	0.009	0.003	0.003
690219.65	4283760.34	0.008	0.003	0.002
689919.65	4283810.34	0.029	0.010	0.009

689969.65	4283810.34	0.021	0.007	0.007
690019.65	4283810.34	0.017	0.006	0.005
690069.65	4283810.34	0.014	0.005	0.004
690119.65	4283810.34	0.012	0.004	0.004
690169.65	4283810.34	0.010	0.003	0.003
690219.65	4283810.34	0.008	0.003	0.003
689919.65	4283860.34	0.029	0.010	0.009
689969.65	4283860.34	0.021	0.007	0.007
690019.65	4283860.34	0.017	0.006	0.005
690069.65	4283860.34	0.014	0.005	0.004
690119.65	4283860.34	0.012	0.004	0.004
690169.65	4283860.34	0.010	0.003	0.003
690219.65	4283860.34	0.008	0.003	0.003
689919.65	4283910.34	0.028	0.010	0.009
689969.65	4283910.34	0.021	0.007	0.006
690019.65	4283910.34	0.017	0.006	0.005
690069.65	4283910.34	0.014	0.005	0.004
690119.65	4283910.34	0.012	0.004	0.004
690169.65	4283910.34	0.010	0.003	0.003
690219.65	4283910.34	0.008	0.003	0.003
689919.65	4283960.34	0.028	0.010	0.009
689969.65	4283960.34	0.021	0.007	0.007
690019.65	4283960.34	0.017	0.006	0.005
690069.65	4283960.34	0.014	0.005	0.004
690119.65	4283960.34	0.012	0.004	0.004
690169.65	4283960.34	0.010	0.003	0.003
690219.65	4283960.34	0.008	0.003	0.002
689919.65	4284010.34	0.028	0.010	0.009
689969.65	4284010.34	0.021	0.007	0.006
690019.65	4284010.34	0.017	0.006	0.005
690069.65	4284010.34	0.014	0.005	0.004
690119.65	4284010.34	0.012	0.004	0.004
690169.65	4284010.34	0.010	0.003	0.003
690219.65	4284010.34	0.008	0.003	0.002
689919.65	4284060.34	0.027	0.010	0.008
689969.65	4284060.34	0.021	0.007	0.006
690019.65	4284060.34	0.017	0.006	0.005
690069.65	4284060.34	0.014	0.005	0.004
690119.65	4284060.34	0.012	0.004	0.004
690169.65	4284060.34	0.010	0.003	0.003
690219.65	4284060.34	0.008	0.003	0.002
689969.65	4284110.34	0.021	0.007	0.007
690019.65	4284110.34	0.018	0.006	0.005
690069.65	4284110.34	0.016	0.005	0.005
690119.65	4284110.34	0.013	0.004	0.004
690169.65	4284110.34	0.010	0.003	0.003
690219.65	4284110.34	0.008	0.003	0.003

689969.65	4284160.34	0.022	0.008	0.007
690019.65	4284160.34	0.019	0.007	0.006
690069.65	4284160.34	0.016	0.005	0.005
690119.65	4284160.34	0.013	0.004	0.004
690169.65	4284160.34	0.011	0.004	0.003
690219.65	4284160.34	0.008	0.003	0.003
689919.65	4284210.34	0.028	0.010	0.009
689969.65	4284210.34	0.022	0.008	0.007
690019.65	4284210.34	0.019	0.007	0.006
690069.65	4284210.34	0.016	0.005	0.005
690119.65	4284210.34	0.013	0.004	0.004
690169.65	4284210.34	0.011	0.004	0.003
690219.65	4284210.34	0.009	0.003	0.003
689869.65	4284260.34	0.039	0.014	0.012
689919.65	4284260.34	0.027	0.009	0.008
689969.65	4284260.34	0.022	0.008	0.007
690019.65	4284260.34	0.018	0.006	0.006
690069.65	4284260.34	0.015	0.005	0.005
690119.65	4284260.34	0.013	0.004	0.004
690169.65	4284260.34	0.011	0.004	0.003
690219.65	4284260.34	0.009	0.003	0.003
689919.65	4284310.34	0.027	0.009	0.008
689969.65	4284310.34	0.021	0.007	0.007
690019.65	4284310.34	0.017	0.006	0.005
690069.65	4284310.34	0.014	0.005	0.004
690119.65	4284310.34	0.012	0.004	0.004
690169.65	4284310.34	0.010	0.004	0.003
690219.65	4284310.34	0.009	0.003	0.003
689919.65	4284360.34	0.029	0.010	0.009
689969.65	4284360.34	0.022	0.008	0.007
690019.65	4284360.34	0.017	0.006	0.005
690069.65	4284360.34	0.014	0.005	0.004
690119.65	4284360.34	0.011	0.004	0.004
690169.65	4284360.34	0.010	0.004	0.003
690219.65	4284360.34	0.008	0.003	0.003
689919.65	4284410.34	0.030	0.011	0.009
689969.65	4284410.34	0.022	0.008	0.007
690019.65	4284410.34	0.018	0.006	0.006
690069.65	4284410.34	0.014	0.005	0.004
690119.65	4284410.34	0.011	0.004	0.004
690169.65	4284410.34	0.010	0.003	0.003
690219.65	4284410.34	0.008	0.003	0.003
689919.65	4284460.34	0.034	0.012	0.010
689969.65	4284460.34	0.024	0.008	0.007
690019.65	4284460.34	0.018	0.006	0.006
690069.65	4284460.34	0.014	0.005	0.004
690119.65	4284460.34	0.011	0.004	0.003

690169.65	4284460.34	0.010	0.003	0.003
690219.65	4284460.34	0.008	0.003	0.002
689243.81	4283030.64	0.003	0.001	0.001
689293.81	4283030.64	0.003	0.001	0.001
689343.81	4283030.64	0.004	0.001	0.001
689393.81	4283030.64	0.004	0.001	0.001
689443.81	4283030.64	0.005	0.002	0.001
689493.81	4283030.64	0.005	0.002	0.002
689543.81	4283030.64	0.006	0.002	0.002
689243.81	4283080.64	0.003	0.001	0.001
689293.81	4283080.64	0.003	0.001	0.001
689343.81	4283080.64	0.004	0.001	0.001
689393.81	4283080.64	0.004	0.002	0.001
689443.81	4283080.64	0.005	0.002	0.002
689493.81	4283080.64	0.006	0.002	0.002
689543.81	4283080.64	0.007	0.003	0.002
689243.81	4283130.64	0.003	0.001	0.001
689293.81	4283130.64	0.004	0.001	0.001
689343.81	4283130.64	0.004	0.001	0.001
689393.81	4283130.64	0.005	0.002	0.001
689443.81	4283130.64	0.006	0.002	0.002
689493.81	4283130.64	0.007	0.002	0.002
689543.81	4283130.64	0.009	0.003	0.003
689243.81	4283180.64	0.003	0.001	0.001
689293.81	4283180.64	0.004	0.001	0.001
689343.81	4283180.64	0.004	0.002	0.001
689393.81	4283180.64	0.005	0.002	0.002
689443.81	4283180.64	0.006	0.002	0.002
689493.81	4283180.64	0.009	0.003	0.003
689543.81	4283180.64	0.013	0.004	0.004
689243.81	4283230.64	0.003	0.001	0.001
689293.81	4283230.64	0.004	0.001	0.001
689343.81	4283230.64	0.005	0.002	0.001
689393.81	4283230.64	0.005	0.002	0.002
689443.81	4283230.64	0.007	0.002	0.002
689243.81	4283280.64	0.004	0.001	0.001
689293.81	4283280.64	0.004	0.001	0.001
689343.81	4283280.64	0.005	0.002	0.001
689393.81	4283280.64	0.006	0.002	0.002
689443.81	4283280.64	0.007	0.003	0.002
689243.81	4283330.64	0.004	0.001	0.001
689293.81	4283330.64	0.004	0.002	0.001
689343.81	4283330.64	0.005	0.002	0.002
689393.81	4283330.64	0.006	0.002	0.002
689443.81	4283330.64	0.009	0.003	0.003
689493.81	4283330.64	0.015	0.005	0.005
689243.81	4283380.64	0.004	0.001	0.001

689293.81	4283380.64	0.005	0.002	0.001
689343.81	4283380.64	0.006	0.002	0.002
689393.81	4283380.64	0.007	0.002	0.002
689443.81	4283380.64	0.009	0.003	0.003
689243.81	4283430.64	0.004	0.001	0.001
689293.81	4283430.64	0.005	0.002	0.002
689343.81	4283430.64	0.006	0.002	0.002
689393.81	4283430.64	0.007	0.003	0.002
689443.81	4283430.64	0.010	0.003	0.003
689243.81	4283480.64	0.004	0.002	0.001
689293.81	4283480.64	0.005	0.002	0.002
689343.81	4283480.64	0.006	0.002	0.002
689393.81	4283480.64	0.008	0.003	0.002
689443.81	4283480.64	0.010	0.004	0.003
689493.81	4283480.64	0.014	0.005	0.004
689584.29	4283182	0.015	0.005	0.005
689626.46	4283180.77	0.016	0.006	0.005
689581.46	4283081.75	0.008	0.003	0.003
689586.89	4283032.14	0.007	0.002	0.002
689628.89	4283033.23	0.008	0.003	0.002
690123.39	4283039.13	0.009	0.003	0.003
690123.39	4283089.13	0.010	0.003	0.003
690173.39	4283089.13	0.009	0.003	0.003
689923.39	4283139.13	0.019	0.007	0.006
689950.32	4283366.56	0.034	0.012	0.011
690000.32	4283366.56	0.020	0.007	0.006
689946.72	4283397.81	0.036	0.013	0.011
689990.74	4283391.96	0.022	0.008	0.007
690047.5	4284607.9	0.016	0.005	0.005
690097.5	4284607.9	0.010	0.004	0.003
690147.5	4284607.9	0.008	0.003	0.003
690197.5	4284607.9	0.007	0.002	0.002
690047.5	4284657.9	0.015	0.005	0.005
690097.5	4284657.9	0.010	0.003	0.003
690147.5	4284657.9	0.008	0.003	0.002
690197.5	4284657.9	0.007	0.002	0.002
689997.5	4284707.9	0.023	0.008	0.007
690097.5	4284707.9	0.010	0.003	0.003
690147.5	4284707.9	0.008	0.003	0.002
690197.5	4284707.9	0.007	0.002	0.002
690047.5	4284757.9	0.013	0.005	0.004
690097.5	4284757.9	0.010	0.003	0.003
690147.5	4284757.9	0.008	0.003	0.002
690197.5	4284757.9	0.006	0.002	0.002
689947.5	4284807.9	0.019	0.007	0.006
690047.5	4284807.9	0.012	0.004	0.004
690097.5	4284807.9	0.009	0.003	0.003

690147.5	4284807.9	0.007	0.003	0.002
690197.5	4284807.9	0.006	0.002	0.002
689897.5	4284857.9	0.019	0.007	0.006
689947.5	4284857.9	0.016	0.006	0.005
689997.5	4284857.9	0.014	0.005	0.004
690047.5	4284857.9	0.011	0.004	0.003
690097.5	4284857.9	0.009	0.003	0.003
690147.5	4284857.9	0.007	0.003	0.002
690197.5	4284857.9	0.006	0.002	0.002
690247.5	4284857.9	0.006	0.002	0.002
689847.5	4284907.9	0.018	0.006	0.006
689897.5	4284907.9	0.016	0.006	0.005
689947.5	4284907.9	0.014	0.005	0.004
689997.5	4284907.9	0.012	0.004	0.004
690047.5	4284907.9	0.010	0.004	0.003
690097.5	4284907.9	0.008	0.003	0.003
690147.5	4284907.9	0.007	0.003	0.002
690197.5	4284907.9	0.006	0.002	0.002
690247.5	4284907.9	0.005	0.002	0.002
689797.5	4284957.9	0.017	0.006	0.005
689847.5	4284957.9	0.016	0.006	0.005
689897.5	4284957.9	0.014	0.005	0.004
689947.5	4284957.9	0.013	0.004	0.004
689997.5	4284957.9	0.011	0.004	0.003
690047.5	4284957.9	0.009	0.003	0.003
690097.5	4284957.9	0.008	0.003	0.002
690147.5	4284957.9	0.007	0.002	0.002
690197.5	4284957.9	0.006	0.002	0.002
690247.5	4284957.9	0.005	0.002	0.002
689897.5	4285007.9	0.013	0.004	0.004
689947.5	4285007.9	0.011	0.004	0.003
689997.5	4285007.9	0.010	0.003	0.003
690047.5	4285007.9	0.009	0.003	0.003
690097.5	4285007.9	0.008	0.003	0.002
690147.5	4285007.9	0.007	0.002	0.002
690197.5	4285007.9	0.006	0.002	0.002
690247.5	4285007.9	0.005	0.002	0.002
689897.5	4285057.9	0.011	0.004	0.004
689947.5	4285057.9	0.010	0.004	0.003
689997.5	4285057.9	0.009	0.003	0.003
690047.5	4285057.9	0.008	0.003	0.002
690097.5	4285057.9	0.007	0.002	0.002
690147.5	4285057.9	0.006	0.002	0.002
690197.5	4285057.9	0.006	0.002	0.002
690247.5	4285057.9	0.005	0.002	0.002
689970.15	4284514.09	0.027	0.009	0.008
690020.15	4284514.09	0.019	0.007	0.006

690070.15	4284514.09	0.014	0.005	0.004
690120.15	4284514.09	0.011	0.004	0.003
690170.15	4284514.09	0.009	0.003	0.003
690220.15	4284514.09	0.007	0.003	0.002
690020.15	4284564.09	0.020	0.007	0.006
690070.15	4284564.09	0.014	0.005	0.004
690120.15	4284564.09	0.010	0.003	0.003
690170.15	4284564.09	0.008	0.003	0.003
690220.15	4284564.09	0.007	0.002	0.002
689216.55	4284758.96	0.006	0.002	0.002
689266.55	4284758.96	0.007	0.003	0.002
689316.55	4284758.96	0.008	0.003	0.003
689366.55	4284758.96	0.010	0.003	0.003
689416.55	4284758.96	0.012	0.004	0.004
689466.55	4284758.96	0.014	0.005	0.004
689516.55	4284758.96	0.019	0.007	0.006
689216.55	4284808.96	0.006	0.002	0.002
689266.55	4284808.96	0.007	0.002	0.002
689316.55	4284808.96	0.008	0.003	0.002
689366.55	4284808.96	0.009	0.003	0.003
689416.55	4284808.96	0.011	0.004	0.003
689566.55	4284808.96	0.022	0.008	0.007
689216.55	4284858.96	0.006	0.002	0.002
689266.55	4284858.96	0.007	0.002	0.002
689316.55	4284858.96	0.008	0.003	0.002
689366.55	4284858.96	0.009	0.003	0.003
689466.55	4284858.96	0.012	0.004	0.004
689516.55	4284858.96	0.015	0.005	0.005
689566.55	4284858.96	0.020	0.007	0.006
689666.55	4284858.96	0.031	0.011	0.010
689266.55	4284908.96	0.006	0.002	0.002
689316.55	4284908.96	0.007	0.003	0.002
689366.55	4284908.96	0.008	0.003	0.003
689416.55	4284908.96	0.010	0.003	0.003
689466.55	4284908.96	0.011	0.004	0.004
689616.55	4284908.96	0.021	0.007	0.007
689216.55	4284958.96	0.005	0.002	0.002
689366.55	4284958.96	0.008	0.003	0.002
689416.55	4284958.96	0.009	0.003	0.003
689466.55	4284958.96	0.011	0.004	0.003
689516.55	4284958.96	0.013	0.004	0.004
689566.55	4284958.96	0.015	0.005	0.005
689616.55	4284958.96	0.017	0.006	0.005
689216.55	4285008.96	0.005	0.002	0.002
689366.55	4285008.96	0.007	0.003	0.002
689416.55	4285008.96	0.008	0.003	0.003
689566.55	4285008.96	0.013	0.005	0.004

689712.61	4284806.28	0.040	0.014	0.012
689665.5	4284822.91	0.038	0.013	0.012
689153.77	4285125.11	0.005	0.002	0.001
689203.77	4285125.11	0.005	0.002	0.002
689303.77	4285125.11	0.006	0.002	0.002
689353.77	4285125.11	0.007	0.002	0.002
689603.77	4285125.11	0.011	0.004	0.003
689653.77	4285125.11	0.012	0.004	0.004
689703.77	4285125.11	0.012	0.004	0.004
689803.77	4285125.11	0.012	0.004	0.004
689853.77	4285125.11	0.011	0.004	0.003
689903.77	4285125.11	0.010	0.004	0.003
689953.77	4285125.11	0.009	0.003	0.003
690003.77	4285125.11	0.008	0.003	0.003
690103.77	4285125.11	0.007	0.002	0.002
689153.77	4285175.11	0.004	0.002	0.001
689203.77	4285175.11	0.005	0.002	0.001
689303.77	4285175.11	0.006	0.002	0.002
689353.77	4285175.11	0.006	0.002	0.002
689603.77	4285175.11	0.010	0.003	0.003
689653.77	4285175.11	0.010	0.004	0.003
689703.77	4285175.11	0.010	0.004	0.003
689753.77	4285175.11	0.010	0.004	0.003
689803.77	4285175.11	0.010	0.004	0.003
689853.77	4285175.11	0.010	0.003	0.003
689903.77	4285175.11	0.009	0.003	0.003
689953.77	4285175.11	0.009	0.003	0.003
690003.77	4285175.11	0.008	0.003	0.002
689153.77	4285225.11	0.004	0.001	0.001
689203.77	4285225.11	0.005	0.002	0.001
689253.77	4285225.11	0.005	0.002	0.002
689303.77	4285225.11	0.005	0.002	0.002
689353.77	4285225.11	0.006	0.002	0.002
689403.77	4285225.11	0.006	0.002	0.002
689453.77	4285225.11	0.007	0.002	0.002
689503.77	4285225.11	0.008	0.003	0.002
689553.77	4285225.11	0.008	0.003	0.003
689603.77	4285225.11	0.009	0.003	0.003
689653.77	4285225.11	0.009	0.003	0.003
689703.77	4285225.11	0.009	0.003	0.003
689753.77	4285225.11	0.009	0.003	0.003
689803.77	4285225.11	0.009	0.003	0.003
689853.77	4285225.11	0.009	0.003	0.003
689903.77	4285225.11	0.008	0.003	0.002
689953.77	4285225.11	0.007	0.003	0.002
690003.77	4285225.11	0.007	0.003	0.002
690053.77	4285225.11	0.006	0.002	0.002

689153.77	4285275.11	0.004	0.001	0.001
689203.77	4285275.11	0.004	0.002	0.001
689253.77	4285275.11	0.005	0.002	0.001
689303.77	4285275.11	0.005	0.002	0.002
689353.77	4285275.11	0.006	0.002	0.002
689403.77	4285275.11	0.006	0.002	0.002
689453.77	4285275.11	0.007	0.002	0.002
689503.77	4285275.11	0.007	0.002	0.002
689553.77	4285275.11	0.007	0.003	0.002
689603.77	4285275.11	0.008	0.003	0.002
689653.77	4285275.11	0.008	0.003	0.002
689703.77	4285275.11	0.007	0.003	0.002
689753.77	4285275.11	0.007	0.003	0.002
689803.77	4285275.11	0.008	0.003	0.002
689853.77	4285275.11	0.007	0.002	0.002
689903.77	4285275.11	0.006	0.002	0.002
689953.77	4285275.11	0.006	0.002	0.002
690003.77	4285275.11	0.006	0.002	0.002
690053.77	4285275.11	0.005	0.002	0.002
689153.77	4285325.11	0.004	0.001	0.001
689203.77	4285325.11	0.004	0.001	0.001
689253.77	4285325.11	0.004	0.002	0.001
689303.77	4285325.11	0.005	0.002	0.001
689353.77	4285325.11	0.005	0.002	0.002
689403.77	4285325.11	0.006	0.002	0.002
689453.77	4285325.11	0.006	0.002	0.002
689503.77	4285325.11	0.006	0.002	0.002
689553.77	4285325.11	0.007	0.002	0.002
689603.77	4285325.11	0.007	0.002	0.002
689653.77	4285325.11	0.007	0.002	0.002
689703.77	4285325.11	0.006	0.002	0.002
689753.77	4285325.11	0.006	0.002	0.002
689803.77	4285325.11	0.007	0.002	0.002
689853.77	4285325.11	0.006	0.002	0.002
689903.77	4285325.11	0.006	0.002	0.002
689953.77	4285325.11	0.005	0.002	0.002
690003.77	4285325.11	0.005	0.002	0.002
690053.77	4285325.11	0.005	0.002	0.001
690103.77	4285325.11	0.005	0.002	0.001
689653.19	4285078.65	0.013	0.005	0.004
689596.53	4285079.83	0.012	0.004	0.004
689417.31	4285054.43	0.008	0.003	0.003
689465.48	4285057.44	0.009	0.003	0.003
689160.76	4284611.23	0.006	0.002	0.002
689595.79	4284809.16	0.029	0.010	0.009
689614.28	4284828.01	0.031	0.011	0.010
689880.93	4283885.33	0.041	0.014	0.013

689878.21	4284393.24	0.041	0.014	0.013
689919.3	4284393.48	0.030	0.010	0.009
690067.31	4284711.79	0.012	0.004	0.004
689854.2	4285030.1	0.013	0.005	0.004
689832.17	4285004.36	0.015	0.005	0.005
689709.9	4284847.93	0.032	0.011	0.010
689566.83	4284730.6	0.028	0.010	0.009
689380.2	4284259.82	0.023	0.008	0.007
689367.58	4284231.36	0.019	0.007	0.006
689441.09	4283793	0.020	0.007	0.006
689436.64	4283733.85	0.017	0.006	0.005
689439.11	4283767.76	0.019	0.007	0.006
689436.64	4283689.05	0.015	0.005	0.005
689444.06	4283650.43	0.015	0.005	0.005
689500.74	4283585.58	0.023	0.008	0.007
689505.94	4283507.86	0.015	0.005	0.005
689546.04	4283356.63	0.017	0.006	0.005
689912.61	4283166.04	0.022	0.008	0.007

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance*
Daily breathing rate for residential receptor is based on the OEHHA 95th percentile moderate intensity brea
Fraction of time at home is set to values per OEHHA Table 8.4 for residential since the nearest school has a
Inhalation cancer potency factor from OEHHA Table 7.1

		DPM Emissions (tons)		DPM Emission Rate (g/s)	
0<2	2<9	Uncontrolled	Tier 4	Uncontrolled	Tier 4
139	0	0.17		0.017	
365	0	0.09		0.006	
226	139	0.08		0.005	
0	365	0.07		0.004	
0	187	0.02		0.002	
47	0	0.05		0.009	
0	0	0.01		0.007	

0<2	2<9
1090	861
1	1
0.96	0.96
10	3
1	1
0.001	0.001
0.001	0.001
1.1	1.1
70.00	70.00

Risk Calculation Part 1, R1 = IF*CPF*CF

3rd Trimester	0<2	2<9
1.36E-05	6.25E-05	0.00E+00
0.00E+00	1.64E-04	0.00E+00
0.00E+00	1.02E-04	1.48E-05
0.00E+00	0.00E+00	3.89E-05
0.00E+00	0.00E+00	1.99E-05
1.36E-05	2.11E-05	0.00E+00
4.62E-06	0.00E+00	0.00E+00

HI	UTM X	UTM Y
0.03	689653.19	4285078.65

roject Construction				
PAREA1	PAREA1	PAREA2	ARLN1	3rd Trimester
2025	2026	2022	2022	
0.001	0.001	0.001	0.003	8.44E-08
0.001	0.001	0.001	0.003	9.77E-08

0.002	0.001	0.001	0.004	1.17E-07
0.002	0.001	0.001	0.006	1.44E-07
0.003	0.001	0.001	0.008	1.83E-07
0.001	0.001	0.001	0.003	8.69E-08
0.001	0.001	0.001	0.003	1.01E-07
0.002	0.001	0.001	0.004	1.21E-07
0.002	0.001	0.001	0.005	1.49E-07
0.003	0.001	0.001	0.007	1.91E-07
0.002	0.001	0.001	0.003	1.05E-07
0.002	0.001	0.001	0.004	1.26E-07
0.002	0.001	0.001	0.005	1.55E-07
0.003	0.002	0.001	0.007	2.00E-07
0.001	0.001	0.001	0.003	9.22E-08
0.002	0.001	0.001	0.003	1.09E-07
0.002	0.001	0.001	0.004	1.31E-07
0.002	0.001	0.001	0.005	1.61E-07
0.003	0.002	0.001	0.006	2.12E-07
0.001	0.000	0.001	0.002	6.67E-08
0.001	0.001	0.001	0.003	9.57E-08
0.002	0.001	0.001	0.003	1.13E-07
0.002	0.001	0.001	0.004	1.36E-07
0.003	0.001	0.001	0.005	1.69E-07
0.002	0.001	0.001	0.003	1.17E-07
0.002	0.001	0.001	0.004	1.41E-07
0.003	0.001	0.001	0.005	1.79E-07
0.004	0.002	0.002	0.005	2.46E-07
0.001	0.001	0.001	0.003	1.03E-07
0.002	0.001	0.001	0.003	1.22E-07
0.002	0.001	0.001	0.004	1.47E-07
0.003	0.002	0.001	0.004	1.87E-07
0.004	0.002	0.002	0.005	2.58E-07
0.001	0.001	0.001	0.002	7.11E-08
0.001	0.001	0.001	0.002	8.08E-08
0.001	0.001	0.001	0.003	9.24E-08
0.002	0.001	0.001	0.003	1.07E-07
0.002	0.001	0.001	0.003	1.26E-07
0.002	0.001	0.001	0.004	1.53E-07
0.003	0.002	0.001	0.004	1.94E-07
0.004	0.002	0.002	0.005	2.68E-07
0.001	0.001	0.001	0.002	7.27E-08
0.001	0.001	0.001	0.002	8.29E-08
0.001	0.001	0.001	0.002	9.50E-08
0.002	0.001	0.001	0.003	1.10E-07
0.002	0.001	0.001	0.003	1.30E-07
0.002	0.001	0.001	0.003	1.58E-07
0.003	0.002	0.001	0.004	2.02E-07
0.005	0.002	0.002	0.004	2.82E-07

0.001	0.001	0.001	0.002	7.46E-08
0.001	0.001	0.001	0.002	8.51E-08
0.001	0.001	0.001	0.002	9.75E-08
0.002	0.001	0.001	0.002	1.13E-07
0.002	0.001	0.001	0.003	1.34E-07
0.003	0.001	0.001	0.003	1.63E-07
0.003	0.002	0.002	0.004	2.09E-07
0.005	0.003	0.002	0.004	2.95E-07
0.001	0.001	0.001	0.002	7.64E-08
0.001	0.001	0.001	0.002	8.69E-08
0.001	0.001	0.001	0.002	9.99E-08
0.002	0.001	0.001	0.002	1.17E-07
0.002	0.001	0.001	0.002	1.39E-07
0.003	0.001	0.001	0.003	1.70E-07
0.004	0.002	0.002	0.003	2.17E-07
0.005	0.003	0.002	0.004	3.12E-07
0.001	0.001	0.001	0.002	8.81E-08
0.002	0.001	0.001	0.002	1.02E-07
0.002	0.001	0.001	0.002	1.20E-07
0.002	0.001	0.001	0.002	1.44E-07
0.003	0.001	0.002	0.003	1.75E-07
0.004	0.002	0.002	0.003	2.25E-07
0.006	0.003	0.002	0.003	3.40E-07
0.002	0.001	0.001	0.002	1.04E-07
0.002	0.001	0.001	0.002	1.21E-07
0.002	0.001	0.001	0.002	1.46E-07
0.003	0.001	0.002	0.002	1.82E-07
0.004	0.002	0.002	0.003	2.33E-07
0.007	0.003	0.002	0.003	3.78E-07
0.002	0.001	0.001	0.002	1.24E-07
0.002	0.001	0.001	0.002	1.48E-07
0.003	0.002	0.002	0.002	1.85E-07
0.005	0.002	0.002	0.002	2.76E-07
0.008	0.004	0.002	0.003	4.37E-07
0.002	0.001	0.002	0.002	1.51E-07
0.003	0.002	0.002	0.002	1.96E-07
0.001	0.001	0.001	0.001	8.18E-08
0.001	0.001	0.001	0.001	9.32E-08
0.002	0.001	0.001	0.002	1.08E-07
0.001	0.001	0.001	0.001	8.71E-08
0.001	0.001	0.002	0.001	8.93E-08
0.001	0.001	0.002	0.001	9.96E-08
0.001	0.001	0.002	0.001	9.21E-08
0.001	0.001	0.002	0.001	1.02E-07
0.002	0.001	0.002	0.001	1.15E-07
0.007	0.004	0.001	0.008	3.99E-07
0.004	0.002	0.001	0.005	2.71E-07

0.003	0.002	0.001	0.004	2.11E-07
0.003	0.001	0.001	0.003	1.76E-07
0.002	0.001	0.002	0.002	1.53E-07
0.002	0.001	0.002	0.002	1.36E-07
0.006	0.003	0.001	0.008	3.85E-07
0.004	0.002	0.001	0.005	2.74E-07
0.004	0.002	0.002	0.004	2.18E-07
0.003	0.001	0.002	0.003	1.84E-07
0.002	0.001	0.002	0.003	1.59E-07
0.002	0.001	0.002	0.002	1.40E-07
0.009	0.005	0.001	0.012	5.57E-07
0.006	0.003	0.001	0.008	3.72E-07
0.005	0.002	0.002	0.006	2.83E-07
0.004	0.002	0.002	0.004	2.28E-07
0.003	0.002	0.002	0.003	1.92E-07
0.003	0.001	0.002	0.003	1.65E-07
0.002	0.001	0.002	0.002	1.44E-07
0.009	0.004	0.002	0.012	5.13E-07
0.006	0.003	0.002	0.008	3.64E-07
0.005	0.002	0.002	0.006	2.85E-07
0.004	0.002	0.002	0.004	2.35E-07
0.003	0.002	0.002	0.003	1.98E-07
0.003	0.001	0.002	0.003	1.69E-07
0.002	0.001	0.002	0.003	1.46E-07
0.008	0.004	0.002	0.011	4.94E-07
0.006	0.003	0.002	0.008	3.61E-07
0.005	0.002	0.002	0.005	2.89E-07
0.004	0.002	0.002	0.003	2.41E-07
0.003	0.002	0.002	0.003	2.00E-07
0.003	0.001	0.002	0.003	1.70E-07
0.002	0.001	0.002	0.002	1.46E-07
0.013	0.007	0.002	0.014	7.63E-07
0.008	0.004	0.002	0.011	4.82E-07
0.006	0.003	0.002	0.008	3.58E-07
0.005	0.002	0.002	0.005	2.92E-07
0.004	0.002	0.002	0.003	2.43E-07
0.003	0.002	0.002	0.003	2.01E-07
0.002	0.001	0.002	0.003	1.71E-07
0.002	0.001	0.002	0.002	1.47E-07
0.008	0.004	0.002	0.010	4.71E-07
0.006	0.003	0.002	0.008	3.56E-07
0.005	0.002	0.002	0.005	2.90E-07
0.004	0.002	0.002	0.003	2.41E-07
0.003	0.002	0.002	0.003	2.02E-07
0.002	0.001	0.002	0.003	1.73E-07
0.002	0.001	0.003	0.003	1.54E-07
0.008	0.004	0.002	0.009	4.65E-07

0.006	0.003	0.002	0.007	3.54E-07
0.005	0.002	0.002	0.005	2.91E-07
0.004	0.002	0.003	0.003	2.43E-07
0.003	0.002	0.003	0.003	2.06E-07
0.003	0.001	0.003	0.003	1.80E-07
0.002	0.001	0.003	0.002	1.59E-07
0.008	0.004	0.002	0.008	4.59E-07
0.006	0.003	0.002	0.007	3.52E-07
0.005	0.002	0.003	0.005	2.92E-07
0.004	0.002	0.003	0.003	2.45E-07
0.003	0.002	0.003	0.003	2.09E-07
0.003	0.001	0.003	0.002	1.83E-07
0.002	0.001	0.003	0.002	1.61E-07
0.008	0.004	0.003	0.008	4.56E-07
0.006	0.003	0.003	0.006	3.51E-07
0.004	0.002	0.003	0.005	2.91E-07
0.004	0.002	0.003	0.003	2.47E-07
0.003	0.002	0.003	0.003	2.13E-07
0.003	0.001	0.003	0.002	1.87E-07
0.002	0.001	0.003	0.002	1.65E-07
0.007	0.004	0.003	0.007	4.52E-07
0.006	0.003	0.003	0.006	3.53E-07
0.005	0.002	0.003	0.004	2.94E-07
0.004	0.002	0.003	0.003	2.51E-07
0.003	0.002	0.004	0.002	2.19E-07
0.003	0.001	0.004	0.002	1.91E-07
0.002	0.001	0.004	0.002	1.67E-07
0.007	0.004	0.003	0.006	4.46E-07
0.006	0.003	0.003	0.005	3.53E-07
0.005	0.002	0.004	0.004	2.97E-07
0.004	0.002	0.004	0.003	2.56E-07
0.003	0.002	0.004	0.002	2.27E-07
0.003	0.001	0.004	0.002	1.96E-07
0.002	0.001	0.004	0.002	1.71E-07
0.007	0.004	0.004	0.005	4.43E-07
0.006	0.003	0.004	0.005	3.55E-07
0.005	0.002	0.004	0.003	3.04E-07
0.004	0.002	0.004	0.003	2.66E-07
0.003	0.002	0.005	0.002	2.36E-07
0.003	0.001	0.004	0.002	2.00E-07
0.002	0.001	0.004	0.002	1.76E-07
0.006	0.003	0.004	0.004	3.67E-07
0.005	0.002	0.005	0.003	3.20E-07
0.004	0.002	0.005	0.002	2.94E-07
0.003	0.002	0.005	0.002	2.53E-07
0.003	0.001	0.005	0.002	2.08E-07
0.002	0.001	0.005	0.001	1.86E-07

0.006	0.003	0.005	0.003	3.85E-07
0.005	0.003	0.006	0.002	3.55E-07
0.004	0.002	0.006	0.002	3.03E-07
0.003	0.002	0.006	0.002	2.66E-07
0.003	0.001	0.006	0.002	2.35E-07
0.002	0.001	0.005	0.001	1.90E-07
0.007	0.004	0.005	0.004	4.64E-07
0.006	0.003	0.006	0.003	3.97E-07
0.005	0.003	0.007	0.002	3.65E-07
0.004	0.002	0.007	0.002	3.14E-07
0.003	0.002	0.007	0.002	2.75E-07
0.003	0.001	0.007	0.002	2.43E-07
0.002	0.001	0.006	0.001	2.06E-07
0.010	0.005	0.006	0.004	6.22E-07
0.007	0.004	0.006	0.004	4.63E-07
0.006	0.003	0.007	0.003	4.01E-07
0.005	0.002	0.007	0.002	3.54E-07
0.004	0.002	0.008	0.002	3.20E-07
0.003	0.002	0.008	0.002	2.85E-07
0.003	0.001	0.007	0.001	2.46E-07
0.002	0.001	0.006	0.001	2.12E-07
0.007	0.004	0.007	0.003	4.79E-07
0.006	0.003	0.008	0.003	4.04E-07
0.005	0.002	0.008	0.002	3.55E-07
0.004	0.002	0.008	0.002	3.08E-07
0.003	0.002	0.008	0.002	2.71E-07
0.003	0.001	0.007	0.001	2.46E-07
0.002	0.001	0.006	0.001	2.10E-07
0.008	0.004	0.008	0.003	5.14E-07
0.006	0.003	0.009	0.003	4.26E-07
0.005	0.002	0.009	0.002	3.67E-07
0.004	0.002	0.009	0.002	3.14E-07
0.003	0.002	0.008	0.002	2.72E-07
0.003	0.001	0.008	0.001	2.46E-07
0.002	0.001	0.007	0.001	2.10E-07
0.008	0.004	0.010	0.003	5.61E-07
0.006	0.003	0.010	0.003	4.53E-07
0.005	0.002	0.010	0.002	3.91E-07
0.004	0.002	0.009	0.002	3.28E-07
0.003	0.002	0.008	0.002	2.76E-07
0.003	0.001	0.008	0.001	2.46E-07
0.002	0.001	0.007	0.001	2.09E-07
0.009	0.005	0.012	0.003	6.30E-07
0.006	0.003	0.012	0.002	4.99E-07
0.005	0.003	0.011	0.002	4.11E-07
0.004	0.002	0.010	0.002	3.40E-07
0.003	0.002	0.009	0.002	2.83E-07

0.003	0.001	0.008	0.001	2.50E-07
0.002	0.001	0.007	0.001	2.02E-07
0.001	0.000	0.001	0.002	5.97E-08
0.001	0.000	0.001	0.003	6.63E-08
0.001	0.000	0.001	0.003	7.41E-08
0.001	0.001	0.001	0.004	8.51E-08
0.001	0.001	0.001	0.006	1.01E-07
0.001	0.001	0.001	0.009	1.24E-07
0.002	0.001	0.001	0.013	1.54E-07
0.001	0.000	0.001	0.003	6.35E-08
0.001	0.000	0.001	0.003	7.22E-08
0.001	0.001	0.001	0.004	8.18E-08
0.001	0.001	0.001	0.005	9.39E-08
0.001	0.001	0.001	0.008	1.14E-07
0.002	0.001	0.001	0.012	1.49E-07
0.002	0.001	0.001	0.019	1.95E-07
0.001	0.000	0.001	0.002	6.49E-08
0.001	0.001	0.001	0.003	7.34E-08
0.001	0.001	0.001	0.004	8.57E-08
0.001	0.001	0.001	0.006	1.04E-07
0.001	0.001	0.001	0.009	1.32E-07
0.002	0.001	0.001	0.019	1.93E-07
0.002	0.001	0.001	0.031	2.77E-07
0.001	0.000	0.001	0.002	6.45E-08
0.001	0.001	0.001	0.002	7.46E-08
0.001	0.001	0.001	0.003	8.81E-08
0.001	0.001	0.001	0.006	1.11E-07
0.002	0.001	0.001	0.013	1.56E-07
0.002	0.001	0.001	0.038	3.06E-07
0.003	0.002	0.001	0.062	4.68E-07
0.001	0.000	0.001	0.002	6.57E-08
0.001	0.001	0.001	0.002	7.54E-08
0.001	0.001	0.001	0.003	8.86E-08
0.001	0.001	0.001	0.005	1.11E-07
0.002	0.001	0.001	0.013	1.66E-07
0.001	0.000	0.001	0.002	6.84E-08
0.001	0.001	0.001	0.002	7.85E-08
0.001	0.001	0.001	0.003	9.29E-08
0.002	0.001	0.001	0.006	1.20E-07
0.002	0.001	0.001	0.020	2.07E-07
0.001	0.001	0.001	0.002	7.18E-08
0.001	0.001	0.001	0.003	8.41E-08
0.001	0.001	0.001	0.005	1.04E-07
0.002	0.001	0.001	0.009	1.39E-07
0.002	0.001	0.001	0.021	2.30E-07
0.004	0.002	0.001	0.057	4.79E-07
0.001	0.001	0.001	0.002	7.62E-08

0.001	0.001	0.001	0.003	8.97E-08
0.001	0.001	0.001	0.005	1.10E-07
0.002	0.001	0.001	0.008	1.46E-07
0.002	0.001	0.001	0.016	2.16E-07
0.001	0.001	0.001	0.003	8.13E-08
0.001	0.001	0.001	0.004	9.61E-08
0.002	0.001	0.001	0.005	1.18E-07
0.002	0.001	0.001	0.008	1.53E-07
0.003	0.001	0.001	0.013	2.10E-07
0.001	0.001	0.001	0.003	8.59E-08
0.001	0.001	0.001	0.004	1.02E-07
0.002	0.001	0.001	0.005	1.25E-07
0.002	0.001	0.001	0.008	1.59E-07
0.003	0.001	0.001	0.011	2.10E-07
0.004	0.002	0.001	0.016	2.79E-07
0.004	0.002	0.001	0.057	4.74E-07
0.004	0.002	0.001	0.052	4.69E-07
0.002	0.001	0.001	0.023	2.27E-07
0.002	0.001	0.001	0.016	1.79E-07
0.002	0.001	0.001	0.019	2.03E-07
0.002	0.001	0.001	0.006	1.65E-07
0.003	0.001	0.001	0.006	1.72E-07
0.002	0.001	0.001	0.005	1.51E-07
0.005	0.003	0.001	0.014	3.36E-07
0.009	0.005	0.001	0.008	5.19E-07
0.005	0.003	0.001	0.005	3.18E-07
0.010	0.005	0.001	0.008	5.42E-07
0.006	0.003	0.001	0.006	3.42E-07
0.004	0.002	0.013	0.002	3.88E-07
0.003	0.001	0.010	0.001	2.86E-07
0.002	0.001	0.008	0.001	2.31E-07
0.002	0.001	0.008	0.001	2.04E-07
0.004	0.002	0.013	0.002	3.77E-07
0.003	0.001	0.010	0.001	2.75E-07
0.002	0.001	0.008	0.001	2.21E-07
0.002	0.001	0.007	0.001	1.96E-07
0.006	0.003	0.016	0.002	5.43E-07
0.003	0.001	0.010	0.001	2.68E-07
0.002	0.001	0.008	0.001	2.14E-07
0.002	0.001	0.007	0.001	1.86E-07
0.004	0.002	0.012	0.001	3.48E-07
0.003	0.001	0.009	0.001	2.59E-07
0.002	0.001	0.007	0.001	2.04E-07
0.002	0.001	0.006	0.001	1.73E-07
0.005	0.003	0.022	0.001	5.61E-07
0.003	0.002	0.011	0.001	3.20E-07
0.002	0.001	0.008	0.001	2.46E-07

0.002	0.001	0.006	0.001	1.94E-07
0.002	0.001	0.005	0.001	1.61E-07
0.005	0.003	0.033	0.001	7.05E-07
0.004	0.002	0.022	0.001	5.19E-07
0.004	0.002	0.015	0.001	3.88E-07
0.003	0.002	0.010	0.001	2.94E-07
0.002	0.001	0.008	0.001	2.30E-07
0.002	0.001	0.006	0.001	1.85E-07
0.002	0.001	0.005	0.001	1.54E-07
0.001	0.001	0.004	0.001	1.36E-07
0.005	0.003	0.058	0.001	1.04E-06
0.004	0.002	0.034	0.001	6.83E-07
0.004	0.002	0.021	0.001	4.79E-07
0.003	0.002	0.014	0.001	3.53E-07
0.003	0.001	0.009	0.001	2.71E-07
0.002	0.001	0.007	0.001	2.13E-07
0.002	0.001	0.005	0.001	1.75E-07
0.002	0.001	0.004	0.001	1.47E-07
0.001	0.001	0.004	0.001	1.27E-07
0.005	0.002	0.115	0.001	1.81E-06
0.004	0.002	0.062	0.001	1.06E-06
0.004	0.002	0.034	0.001	6.61E-07
0.003	0.002	0.019	0.001	4.38E-07
0.003	0.001	0.012	0.001	3.18E-07
0.002	0.001	0.008	0.001	2.46E-07
0.002	0.001	0.006	0.001	1.98E-07
0.002	0.001	0.005	0.001	1.64E-07
0.002	0.001	0.004	0.001	1.38E-07
0.001	0.001	0.003	0.001	1.21E-07
0.003	0.002	0.032	0.001	6.13E-07
0.003	0.002	0.017	0.001	3.88E-07
0.003	0.001	0.011	0.001	2.86E-07
0.002	0.001	0.008	0.001	2.25E-07
0.002	0.001	0.006	0.001	1.83E-07
0.002	0.001	0.004	0.001	1.53E-07
0.002	0.001	0.004	0.001	1.32E-07
0.001	0.001	0.003	0.001	1.16E-07
0.003	0.002	0.028	0.001	5.46E-07
0.003	0.001	0.016	0.001	3.58E-07
0.002	0.001	0.010	0.001	2.66E-07
0.002	0.001	0.007	0.001	2.11E-07
0.002	0.001	0.005	0.001	1.73E-07
0.002	0.001	0.004	0.001	1.47E-07
0.001	0.001	0.003	0.001	1.27E-07
0.001	0.001	0.003	0.001	1.12E-07
0.007	0.004	0.014	0.002	5.71E-07
0.005	0.003	0.013	0.002	4.40E-07

0.004	0.002	0.011	0.002	3.45E-07
0.003	0.001	0.010	0.001	2.83E-07
0.002	0.001	0.009	0.001	2.45E-07
0.002	0.001	0.007	0.001	1.99E-07
0.005	0.003	0.014	0.002	4.62E-07
0.004	0.002	0.011	0.002	3.46E-07
0.003	0.001	0.009	0.001	2.70E-07
0.002	0.001	0.008	0.001	2.31E-07
0.002	0.001	0.007	0.001	1.99E-07
0.002	0.001	0.003	0.001	1.33E-07
0.002	0.001	0.004	0.001	1.53E-07
0.002	0.001	0.004	0.001	1.76E-07
0.003	0.001	0.005	0.001	2.05E-07
0.003	0.002	0.006	0.002	2.42E-07
0.004	0.002	0.007	0.002	2.97E-07
0.005	0.003	0.009	0.002	3.85E-07
0.002	0.001	0.003	0.001	1.32E-07
0.002	0.001	0.004	0.001	1.52E-07
0.002	0.001	0.004	0.001	1.75E-07
0.002	0.001	0.005	0.001	2.04E-07
0.003	0.002	0.006	0.002	2.42E-07
0.006	0.003	0.015	0.002	5.17E-07
0.002	0.001	0.003	0.001	1.29E-07
0.002	0.001	0.004	0.001	1.49E-07
0.002	0.001	0.005	0.001	1.73E-07
0.002	0.001	0.006	0.001	2.03E-07
0.003	0.002	0.009	0.001	3.02E-07
0.004	0.002	0.013	0.001	3.96E-07
0.005	0.003	0.020	0.002	5.47E-07
0.008	0.004	0.047	0.002	1.06E-06
0.002	0.001	0.004	0.001	1.44E-07
0.002	0.001	0.005	0.001	1.69E-07
0.002	0.001	0.006	0.001	2.01E-07
0.003	0.001	0.008	0.001	2.43E-07
0.003	0.002	0.011	0.001	3.08E-07
0.006	0.003	0.041	0.001	8.56E-07
0.001	0.001	0.003	0.001	1.19E-07
0.002	0.001	0.006	0.001	1.93E-07
0.002	0.001	0.008	0.001	2.39E-07
0.003	0.001	0.013	0.001	3.21E-07
0.003	0.002	0.026	0.001	5.31E-07
0.004	0.002	0.044	0.001	8.05E-07
0.005	0.002	0.060	0.001	1.06E-06
0.001	0.001	0.003	0.001	1.17E-07
0.002	0.001	0.006	0.001	1.84E-07
0.002	0.001	0.008	0.001	2.26E-07
0.004	0.002	0.057	0.001	9.63E-07

0.011	0.006	0.055	0.002	1.30E-06
0.010	0.005	0.036	0.002	1.01E-06
0.001	0.001	0.003	0.001	1.13E-07
0.001	0.001	0.004	0.001	1.27E-07
0.002	0.001	0.006	0.001	1.69E-07
0.002	0.001	0.008	0.001	2.00E-07
0.003	0.002	0.078	0.001	1.22E-06
0.003	0.002	0.103	0.001	1.56E-06
0.003	0.002	0.136	0.001	2.01E-06
0.003	0.002	0.136	0.001	2.00E-06
0.003	0.002	0.068	0.001	1.08E-06
0.003	0.001	0.029	0.001	5.34E-07
0.003	0.001	0.017	0.001	3.64E-07
0.002	0.001	0.011	0.001	2.63E-07
0.002	0.001	0.005	0.001	1.66E-07
0.001	0.001	0.004	0.001	1.13E-07
0.001	0.001	0.004	0.001	1.27E-07
0.002	0.001	0.007	0.001	1.71E-07
0.002	0.001	0.009	0.001	2.06E-07
0.003	0.001	0.057	0.001	9.07E-07
0.003	0.001	0.072	0.001	1.12E-06
0.003	0.001	0.093	0.001	1.41E-06
0.003	0.001	0.113	0.001	1.68E-06
0.003	0.001	0.086	0.001	1.31E-06
0.003	0.001	0.051	0.001	8.36E-07
0.002	0.001	0.025	0.001	4.70E-07
0.002	0.001	0.017	0.001	3.45E-07
0.002	0.001	0.012	0.001	2.71E-07
0.001	0.001	0.004	0.001	1.13E-07
0.001	0.001	0.004	0.001	1.26E-07
0.001	0.001	0.005	0.001	1.43E-07
0.001	0.001	0.007	0.001	1.69E-07
0.002	0.001	0.009	0.001	2.05E-07
0.002	0.001	0.012	0.001	2.55E-07
0.002	0.001	0.017	0.001	3.32E-07
0.002	0.001	0.025	0.001	4.43E-07
0.002	0.001	0.034	0.001	5.71E-07
0.002	0.001	0.043	0.001	7.05E-07
0.002	0.001	0.053	0.001	8.47E-07
0.002	0.001	0.060	0.001	9.46E-07
0.002	0.001	0.064	0.001	9.94E-07
0.002	0.001	0.058	0.001	9.09E-07
0.002	0.001	0.037	0.001	6.24E-07
0.002	0.001	0.020	0.001	3.77E-07
0.002	0.001	0.014	0.001	2.88E-07
0.002	0.001	0.011	0.001	2.57E-07
0.002	0.001	0.007	0.001	1.88E-07

0.001	0.001	0.004	0.001	1.10E-07
0.001	0.001	0.004	0.001	1.23E-07
0.001	0.001	0.005	0.001	1.42E-07
0.001	0.001	0.007	0.001	1.66E-07
0.001	0.001	0.009	0.001	1.98E-07
0.002	0.001	0.011	0.001	2.41E-07
0.002	0.001	0.015	0.001	3.02E-07
0.002	0.001	0.021	0.001	3.82E-07
0.002	0.001	0.027	0.001	4.72E-07
0.002	0.001	0.031	0.001	5.37E-07
0.002	0.001	0.036	0.001	6.01E-07
0.002	0.001	0.038	0.001	6.18E-07
0.002	0.001	0.038	0.001	6.13E-07
0.002	0.001	0.035	0.001	5.81E-07
0.002	0.001	0.024	0.001	4.29E-07
0.002	0.001	0.015	0.001	2.96E-07
0.002	0.001	0.011	0.001	2.26E-07
0.002	0.001	0.008	0.001	1.90E-07
0.001	0.001	0.006	0.001	1.46E-07
0.001	0.001	0.004	0.001	1.07E-07
0.001	0.001	0.004	0.001	1.13E-07
0.001	0.001	0.005	0.001	1.38E-07
0.001	0.001	0.007	0.001	1.59E-07
0.001	0.001	0.008	0.001	1.87E-07
0.001	0.001	0.011	0.001	2.24E-07
0.002	0.001	0.014	0.001	2.72E-07
0.002	0.001	0.018	0.001	3.34E-07
0.002	0.001	0.022	0.001	3.97E-07
0.002	0.001	0.024	0.001	4.27E-07
0.002	0.001	0.026	0.001	4.53E-07
0.002	0.001	0.027	0.001	4.57E-07
0.002	0.001	0.027	0.001	4.57E-07
0.002	0.001	0.026	0.001	4.52E-07
0.002	0.001	0.020	0.001	3.60E-07
0.002	0.001	0.014	0.001	2.71E-07
0.001	0.001	0.010	0.001	2.09E-07
0.001	0.001	0.007	0.001	1.65E-07
0.001	0.001	0.005	0.001	1.35E-07
0.001	0.001	0.005	0.001	1.31E-07
0.003	0.002	0.145	0.001	2.15E-06
0.003	0.002	0.100	0.001	1.52E-06
0.002	0.001	0.009	0.001	2.36E-07
0.002	0.001	0.017	0.001	3.60E-07
0.002	0.001	0.002	0.001	1.15E-07
0.008	0.004	0.019	0.002	6.58E-07
0.008	0.004	0.024	0.002	7.54E-07
0.011	0.006	0.002	0.009	6.33E-07

0.011	0.006	0.009	0.003	6.86E-07
0.008	0.004	0.009	0.003	5.46E-07
0.003	0.002	0.011	0.001	3.20E-07
0.004	0.002	0.065	0.001	1.06E-06
0.004	0.002	0.080	0.001	1.28E-06
0.008	0.004	0.083	0.002	1.57E-06
0.008	0.004	0.011	0.002	5.46E-07
0.006	0.003	0.003	0.002	3.62E-07
0.005	0.003	0.002	0.002	3.05E-07
0.005	0.003	0.002	0.006	3.20E-07
0.005	0.002	0.002	0.006	2.87E-07
0.005	0.003	0.002	0.006	3.06E-07
0.004	0.002	0.002	0.007	2.58E-07
0.004	0.002	0.002	0.007	2.58E-07
0.006	0.003	0.002	0.010	3.79E-07
0.004	0.002	0.001	0.015	3.00E-07
0.005	0.002	0.001	0.080	6.17E-07
0.006	0.003	0.001	0.015	3.85E-07

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athing rates (OEHHA Table 5.7).

n unmitigated cancer risk of <1 per million.

Risk Calculation Part 2

$\sum R1*C_{DPM}$			HI
			C_{DPM}/REL
0<2	2<9	Total	unitless
6.73E-07	7.66E-08	0.83	0.002
7.93E-07	9.03E-08	0.98	0.002

9.47E-07	1.08E-07	1.17	0.002
1.16E-06	1.33E-07	1.44	0.003
1.47E-06	1.69E-07	1.83	0.004
7.05E-07	8.02E-08	0.87	0.002
8.35E-07	9.51E-08	1.03	0.002
9.98E-07	1.14E-07	1.23	0.002
1.23E-06	1.41E-07	1.52	0.003
1.59E-06	1.83E-07	1.96	0.004
8.80E-07	1.00E-07	1.09	0.002
1.05E-06	1.20E-07	1.30	0.002
1.30E-06	1.49E-07	1.61	0.003
1.71E-06	1.97E-07	2.11	0.004
7.74E-07	8.81E-08	0.95	0.002
9.24E-07	1.05E-07	1.14	0.002
1.11E-06	1.27E-07	1.37	0.002
1.38E-06	1.58E-07	1.70	0.003
1.87E-06	2.15E-07	2.30	0.004
5.32E-07	6.03E-08	0.66	0.001
8.02E-07	9.13E-08	0.99	0.002
9.58E-07	1.09E-07	1.18	0.002
1.16E-06	1.33E-07	1.43	0.003
1.48E-06	1.70E-07	1.82	0.003
9.89E-07	1.13E-07	1.22	0.002
1.22E-06	1.40E-07	1.50	0.003
1.58E-06	1.82E-07	1.95	0.003
2.27E-06	2.62E-07	2.78	0.004
8.64E-07	9.85E-08	1.07	0.002
1.03E-06	1.18E-07	1.27	0.002
1.29E-06	1.47E-07	1.58	0.003
1.69E-06	1.93E-07	2.07	0.003
2.41E-06	2.78E-07	2.95	0.004
5.98E-07	6.80E-08	0.74	0.001
6.72E-07	7.64E-08	0.83	0.001
7.71E-07	8.77E-08	0.95	0.002
9.03E-07	1.03E-07	1.11	0.002
1.08E-06	1.24E-07	1.33	0.002
1.35E-06	1.55E-07	1.66	0.003
1.77E-06	2.03E-07	2.16	0.003
2.54E-06	2.92E-07	3.10	0.005
6.22E-07	7.07E-08	0.77	0.001
7.00E-07	7.96E-08	0.86	0.002
8.06E-07	9.18E-08	0.99	0.002
9.45E-07	1.08E-07	1.16	0.002
1.13E-06	1.29E-07	1.39	0.002
1.41E-06	1.62E-07	1.73	0.003
1.86E-06	2.13E-07	2.27	0.003
2.70E-06	3.11E-07	3.29	0.005

6.40E-07	7.28E-08	0.79	0.001
7.27E-07	8.27E-08	0.89	0.002
8.42E-07	9.58E-08	1.03	0.002
9.90E-07	1.13E-07	1.22	0.002
1.19E-06	1.36E-07	1.46	0.002
1.48E-06	1.69E-07	1.81	0.003
1.95E-06	2.24E-07	2.38	0.004
2.85E-06	3.29E-07	3.47	0.005
6.53E-07	7.44E-08	0.80	0.001
7.49E-07	8.52E-08	0.92	0.002
8.73E-07	9.94E-08	1.07	0.002
1.04E-06	1.18E-07	1.27	0.002
1.25E-06	1.43E-07	1.53	0.002
1.55E-06	1.78E-07	1.90	0.003
2.04E-06	2.34E-07	2.49	0.004
3.04E-06	3.51E-07	3.70	0.005
7.67E-07	8.74E-08	0.94	0.002
8.96E-07	1.02E-07	1.10	0.002
1.07E-06	1.22E-07	1.31	0.002
1.30E-06	1.49E-07	1.60	0.002
1.61E-06	1.85E-07	1.97	0.003
2.12E-06	2.43E-07	2.59	0.004
3.34E-06	3.85E-07	4.07	0.005
9.22E-07	1.05E-07	1.13	0.002
1.09E-06	1.24E-07	1.33	0.002
1.33E-06	1.51E-07	1.62	0.002
1.68E-06	1.93E-07	2.06	0.003
2.22E-06	2.54E-07	2.70	0.004
3.76E-06	4.34E-07	4.57	0.006
1.11E-06	1.27E-07	1.36	0.002
1.35E-06	1.54E-07	1.65	0.002
1.73E-06	1.97E-07	2.11	0.003
2.67E-06	3.06E-07	3.25	0.004
4.45E-06	5.14E-07	5.40	0.007
1.39E-06	1.58E-07	1.69	0.002
1.84E-06	2.10E-07	2.25	0.003
6.96E-07	7.86E-08	0.86	0.001
8.12E-07	9.20E-08	1.00	0.002
9.54E-07	1.08E-07	1.17	0.002
7.08E-07	7.91E-08	0.87	0.001
7.15E-07	7.94E-08	0.88	0.001
8.15E-07	9.09E-08	1.01	0.002
7.26E-07	8.03E-08	0.90	0.002
8.16E-07	9.06E-08	1.01	0.002
9.39E-07	1.05E-07	1.16	0.002
3.88E-06	4.50E-07	4.73	0.007
2.59E-06	2.99E-07	3.16	0.005

1.98E-06	2.28E-07	2.42	0.004
1.62E-06	1.86E-07	1.99	0.003
1.38E-06	1.58E-07	1.69	0.003
1.21E-06	1.37E-07	1.48	0.002
3.71E-06	4.30E-07	4.53	0.007
2.59E-06	2.99E-07	3.16	0.005
2.02E-06	2.33E-07	2.48	0.004
1.67E-06	1.92E-07	2.05	0.003
1.42E-06	1.62E-07	1.74	0.003
1.23E-06	1.39E-07	1.51	0.002
5.41E-06	6.29E-07	6.60	0.010
3.56E-06	4.12E-07	4.34	0.007
2.64E-06	3.04E-07	3.22	0.005
2.11E-06	2.42E-07	2.58	0.004
1.75E-06	2.00E-07	2.14	0.003
1.46E-06	1.67E-07	1.80	0.003
1.24E-06	1.41E-07	1.53	0.002
4.93E-06	5.72E-07	6.01	0.009
3.45E-06	3.99E-07	4.21	0.006
2.66E-06	3.06E-07	3.25	0.005
2.19E-06	2.51E-07	2.67	0.004
1.81E-06	2.07E-07	2.22	0.003
1.49E-06	1.69E-07	1.82	0.003
1.24E-06	1.40E-07	1.53	0.002
4.70E-06	5.45E-07	5.74	0.009
3.39E-06	3.91E-07	4.14	0.006
2.71E-06	3.11E-07	3.31	0.005
2.27E-06	2.60E-07	2.77	0.004
1.82E-06	2.07E-07	2.22	0.003
1.48E-06	1.67E-07	1.82	0.003
1.23E-06	1.38E-07	1.51	0.002
7.58E-06	8.81E-07	9.22	0.013
4.58E-06	5.30E-07	5.59	0.009
3.33E-06	3.85E-07	4.08	0.006
2.75E-06	3.16E-07	3.36	0.005
2.27E-06	2.59E-07	2.77	0.004
1.79E-06	2.04E-07	2.20	0.003
1.46E-06	1.65E-07	1.79	0.003
1.22E-06	1.37E-07	1.51	0.002
4.49E-06	5.19E-07	5.48	0.008
3.30E-06	3.81E-07	4.04	0.006
2.71E-06	3.11E-07	3.31	0.005
2.21E-06	2.52E-07	2.70	0.004
1.77E-06	2.01E-07	2.17	0.003
1.46E-06	1.65E-07	1.80	0.003
1.26E-06	1.40E-07	1.55	0.003
4.43E-06	5.13E-07	5.41	0.008

3.27E-06	3.77E-07	4.00	0.006
2.69E-06	3.08E-07	3.29	0.005
2.21E-06	2.52E-07	2.71	0.004
1.80E-06	2.04E-07	2.21	0.003
1.52E-06	1.71E-07	1.87	0.003
1.29E-06	1.44E-07	1.59	0.003
4.38E-06	5.06E-07	5.35	0.008
3.25E-06	3.73E-07	3.97	0.006
2.67E-06	3.06E-07	3.27	0.005
2.20E-06	2.50E-07	2.69	0.004
1.81E-06	2.05E-07	2.23	0.003
1.53E-06	1.71E-07	1.88	0.003
1.29E-06	1.44E-07	1.60	0.003
4.35E-06	5.02E-07	5.31	0.008
3.23E-06	3.71E-07	3.95	0.006
2.62E-06	2.99E-07	3.21	0.005
2.18E-06	2.47E-07	2.68	0.004
1.83E-06	2.05E-07	2.25	0.003
1.54E-06	1.72E-07	1.90	0.003
1.30E-06	1.44E-07	1.61	0.003
4.32E-06	4.97E-07	5.27	0.008
3.26E-06	3.73E-07	3.98	0.006
2.64E-06	3.01E-07	3.24	0.005
2.19E-06	2.47E-07	2.69	0.004
1.85E-06	2.07E-07	2.27	0.004
1.55E-06	1.72E-07	1.91	0.003
1.29E-06	1.42E-07	1.60	0.003
4.24E-06	4.88E-07	5.18	0.007
3.23E-06	3.69E-07	3.96	0.006
2.64E-06	3.00E-07	3.24	0.005
2.21E-06	2.48E-07	2.71	0.004
1.88E-06	2.09E-07	2.31	0.004
1.55E-06	1.71E-07	1.92	0.003
1.29E-06	1.41E-07	1.60	0.003
4.20E-06	4.82E-07	5.12	0.007
3.23E-06	3.68E-07	3.96	0.006
2.68E-06	3.03E-07	3.28	0.005
2.26E-06	2.53E-07	2.78	0.004
1.92E-06	2.12E-07	2.36	0.004
1.55E-06	1.70E-07	1.92	0.003
1.31E-06	1.42E-07	1.63	0.003
3.34E-06	3.80E-07	4.09	0.006
2.79E-06	3.14E-07	3.43	0.005
2.46E-06	2.74E-07	3.03	0.005
2.01E-06	2.22E-07	2.49	0.004
1.58E-06	1.72E-07	1.96	0.003
1.36E-06	1.46E-07	1.69	0.003

3.48E-06	3.93E-07	4.26	0.006
3.07E-06	3.44E-07	3.77	0.006
2.48E-06	2.75E-07	3.06	0.005
2.08E-06	2.28E-07	2.57	0.004
1.75E-06	1.89E-07	2.17	0.004
1.35E-06	1.45E-07	1.69	0.003
4.30E-06	4.89E-07	5.25	0.007
3.51E-06	3.96E-07	4.31	0.006
3.07E-06	3.42E-07	3.78	0.006
2.51E-06	2.76E-07	3.10	0.005
2.09E-06	2.27E-07	2.59	0.004
1.77E-06	1.91E-07	2.21	0.004
1.45E-06	1.55E-07	1.81	0.003
6.02E-06	6.89E-07	7.33	0.010
4.20E-06	4.76E-07	5.14	0.007
3.47E-06	3.89E-07	4.26	0.006
2.89E-06	3.19E-07	3.56	0.006
2.47E-06	2.70E-07	3.06	0.005
2.10E-06	2.27E-07	2.61	0.004
1.75E-06	1.87E-07	2.19	0.004
1.47E-06	1.57E-07	1.84	0.003
4.26E-06	4.80E-07	5.22	0.008
3.38E-06	3.76E-07	4.16	0.006
2.81E-06	3.09E-07	3.47	0.006
2.31E-06	2.50E-07	2.86	0.005
1.94E-06	2.08E-07	2.42	0.004
1.71E-06	1.82E-07	2.14	0.004
1.44E-06	1.52E-07	1.80	0.003
4.49E-06	5.04E-07	5.51	0.008
3.47E-06	3.83E-07	4.28	0.007
2.81E-06	3.07E-07	3.49	0.006
2.29E-06	2.47E-07	2.85	0.005
1.90E-06	2.03E-07	2.38	0.004
1.68E-06	1.77E-07	2.10	0.004
1.41E-06	1.48E-07	1.77	0.003
4.81E-06	5.38E-07	5.91	0.009
3.59E-06	3.94E-07	4.44	0.007
2.93E-06	3.17E-07	3.64	0.006
2.34E-06	2.50E-07	2.92	0.005
1.90E-06	2.01E-07	2.37	0.004
1.65E-06	1.73E-07	2.06	0.004
1.37E-06	1.43E-07	1.73	0.003
5.34E-06	5.94E-07	6.56	0.010
3.88E-06	4.23E-07	4.80	0.008
3.01E-06	3.23E-07	3.74	0.006
2.37E-06	2.52E-07	2.96	0.005
1.90E-06	1.99E-07	2.38	0.004

1.63E-06	1.70E-07	2.05	0.004
1.29E-06	1.34E-07	1.63	0.003
4.48E-07	5.06E-08	0.56	0.001
4.96E-07	5.62E-08	0.62	0.001
5.50E-07	6.23E-08	0.69	0.002
6.19E-07	7.03E-08	0.77	0.002
7.05E-07	8.03E-08	0.89	0.002
8.12E-07	9.28E-08	1.03	0.003
9.44E-07	1.08E-07	1.21	0.004
4.74E-07	5.36E-08	0.59	0.001
5.29E-07	6.00E-08	0.66	0.002
5.96E-07	6.76E-08	0.75	0.002
6.75E-07	7.68E-08	0.85	0.002
7.78E-07	8.88E-08	0.98	0.003
9.20E-07	1.05E-07	1.17	0.004
1.10E-06	1.27E-07	1.43	0.005
5.02E-07	5.67E-08	0.62	0.001
5.73E-07	6.49E-08	0.71	0.001
6.51E-07	7.39E-08	0.81	0.002
7.43E-07	8.46E-08	0.93	0.002
8.68E-07	9.92E-08	1.10	0.003
1.07E-06	1.23E-07	1.39	0.005
1.37E-06	1.57E-07	1.80	0.008
5.20E-07	5.89E-08	0.64	0.001
6.00E-07	6.79E-08	0.74	0.001
6.96E-07	7.91E-08	0.86	0.002
8.06E-07	9.18E-08	1.01	0.002
9.68E-07	1.11E-07	1.24	0.004
1.35E-06	1.55E-07	1.81	0.009
1.92E-06	2.21E-07	2.60	0.015
5.36E-07	6.06E-08	0.66	0.001
6.19E-07	7.02E-08	0.76	0.001
7.19E-07	8.17E-08	0.89	0.002
8.42E-07	9.60E-08	1.05	0.002
1.04E-06	1.19E-07	1.33	0.004
5.58E-07	6.32E-08	0.69	0.001
6.46E-07	7.33E-08	0.80	0.001
7.50E-07	8.52E-08	0.93	0.002
8.88E-07	1.01E-07	1.11	0.003
1.15E-06	1.32E-07	1.49	0.006
5.84E-07	6.62E-08	0.72	0.001
6.76E-07	7.68E-08	0.84	0.002
7.94E-07	9.04E-08	0.99	0.002
9.67E-07	1.10E-07	1.22	0.003
1.32E-06	1.52E-07	1.70	0.006
2.26E-06	2.61E-07	3.00	0.015
6.18E-07	7.01E-08	0.76	0.001

7.20E-07	8.19E-08	0.89	0.002
8.62E-07	9.82E-08	1.07	0.002
1.07E-06	1.22E-07	1.34	0.003
1.42E-06	1.63E-07	1.80	0.005
6.55E-07	7.44E-08	0.81	0.002
7.68E-07	8.75E-08	0.95	0.002
9.26E-07	1.06E-07	1.15	0.002
1.16E-06	1.32E-07	1.44	0.003
1.50E-06	1.73E-07	1.89	0.005
6.93E-07	7.88E-08	0.86	0.002
8.17E-07	9.31E-08	1.01	0.002
9.86E-07	1.13E-07	1.22	0.003
1.23E-06	1.41E-07	1.53	0.003
1.59E-06	1.83E-07	1.98	0.005
2.10E-06	2.42E-07	2.63	0.006
2.22E-06	2.57E-07	2.95	0.015
2.43E-06	2.82E-07	3.19	0.014
1.26E-06	1.45E-07	1.63	0.006
1.07E-06	1.23E-07	1.37	0.005
1.20E-06	1.38E-07	1.54	0.005
1.41E-06	1.63E-07	1.74	0.003
1.49E-06	1.71E-07	1.83	0.003
1.33E-06	1.53E-07	1.63	0.003
2.89E-06	3.35E-07	3.56	0.007
5.20E-06	6.04E-07	6.32	0.009
3.11E-06	3.61E-07	3.79	0.005
5.47E-06	6.36E-07	6.64	0.009
3.37E-06	3.91E-07	4.10	0.006
2.62E-06	2.75E-07	3.28	0.006
1.79E-06	1.84E-07	2.26	0.004
1.41E-06	1.44E-07	1.79	0.004
1.23E-06	1.24E-07	1.55	0.003
2.48E-06	2.59E-07	3.12	0.006
1.69E-06	1.73E-07	2.14	0.004
1.35E-06	1.37E-07	1.70	0.003
1.18E-06	1.20E-07	1.50	0.003
3.86E-06	4.11E-07	4.81	0.008
1.66E-06	1.71E-07	2.10	0.004
1.32E-06	1.35E-07	1.67	0.003
1.15E-06	1.17E-07	1.45	0.003
2.26E-06	2.34E-07	2.84	0.005
1.64E-06	1.69E-07	2.07	0.004
1.29E-06	1.33E-07	1.62	0.003
1.10E-06	1.14E-07	1.39	0.003
3.32E-06	3.34E-07	4.22	0.008
2.05E-06	2.12E-07	2.58	0.005
1.59E-06	1.65E-07	2.00	0.004

1.26E-06	1.31E-07	1.58	0.003
1.06E-06	1.11E-07	1.33	0.003
3.52E-06	3.29E-07	4.55	0.011
2.91E-06	2.86E-07	3.71	0.008
2.36E-06	2.39E-07	2.99	0.006
1.88E-06	1.94E-07	2.37	0.005
1.51E-06	1.58E-07	1.90	0.004
1.24E-06	1.30E-07	1.55	0.003
1.05E-06	1.10E-07	1.31	0.002
9.28E-07	9.81E-08	1.16	0.002
4.01E-06	3.25E-07	5.37	0.016
3.16E-06	2.86E-07	4.13	0.010
2.57E-06	2.49E-07	3.30	0.007
2.11E-06	2.13E-07	2.68	0.005
1.74E-06	1.80E-07	2.19	0.004
1.43E-06	1.50E-07	1.79	0.003
1.20E-06	1.27E-07	1.50	0.003
1.02E-06	1.09E-07	1.28	0.002
8.97E-07	9.57E-08	1.12	0.002
5.09E-06	3.09E-07	7.20	0.027
3.73E-06	2.83E-07	5.07	0.016
2.88E-06	2.53E-07	3.80	0.010
2.31E-06	2.22E-07	2.97	0.007
1.90E-06	1.92E-07	2.41	0.005
1.59E-06	1.66E-07	2.01	0.004
1.35E-06	1.42E-07	1.69	0.003
1.15E-06	1.23E-07	1.44	0.003
9.91E-07	1.06E-07	1.24	0.002
8.71E-07	9.36E-08	1.09	0.002
2.60E-06	2.24E-07	3.44	0.009
2.05E-06	1.97E-07	2.64	0.006
1.72E-06	1.74E-07	2.18	0.004
1.46E-06	1.52E-07	1.84	0.003
1.26E-06	1.33E-07	1.57	0.003
1.09E-06	1.17E-07	1.36	0.002
9.57E-07	1.03E-07	1.19	0.002
8.50E-07	9.17E-08	1.06	0.002
2.34E-06	2.03E-07	3.09	0.008
1.88E-06	1.81E-07	2.42	0.005
1.58E-06	1.60E-07	2.01	0.004
1.36E-06	1.41E-07	1.71	0.003
1.18E-06	1.24E-07	1.48	0.003
1.04E-06	1.11E-07	1.30	0.002
9.24E-07	9.94E-08	1.15	0.002
8.28E-07	8.95E-08	1.03	0.002
4.40E-06	4.78E-07	5.45	0.009
3.17E-06	3.39E-07	3.95	0.007

2.36E-06	2.49E-07	2.95	0.005
1.84E-06	1.92E-07	2.32	0.004
1.55E-06	1.60E-07	1.96	0.004
1.24E-06	1.27E-07	1.57	0.003
3.30E-06	3.52E-07	4.11	0.007
2.30E-06	2.41E-07	2.89	0.005
1.71E-06	1.76E-07	2.15	0.004
1.41E-06	1.44E-07	1.79	0.004
1.21E-06	1.23E-07	1.53	0.003
1.01E-06	1.10E-07	1.26	0.002
1.18E-06	1.28E-07	1.46	0.002
1.36E-06	1.49E-07	1.69	0.003
1.59E-06	1.74E-07	1.97	0.003
1.89E-06	2.06E-07	2.33	0.004
2.31E-06	2.52E-07	2.86	0.005
3.02E-06	3.30E-07	3.73	0.006
9.86E-07	1.07E-07	1.22	0.002
1.14E-06	1.23E-07	1.41	0.002
1.31E-06	1.42E-07	1.63	0.003
1.52E-06	1.65E-07	1.89	0.003
1.79E-06	1.94E-07	2.23	0.004
3.71E-06	3.96E-07	4.63	0.008
9.58E-07	1.04E-07	1.19	0.002
1.09E-06	1.18E-07	1.36	0.002
1.26E-06	1.35E-07	1.57	0.003
1.46E-06	1.57E-07	1.82	0.003
2.07E-06	2.18E-07	2.59	0.005
2.59E-06	2.70E-07	3.26	0.006
3.43E-06	3.52E-07	4.33	0.008
5.68E-06	5.48E-07	7.29	0.016
1.05E-06	1.13E-07	1.30	0.002
1.20E-06	1.29E-07	1.50	0.003
1.40E-06	1.48E-07	1.75	0.003
1.64E-06	1.72E-07	2.05	0.004
1.96E-06	2.02E-07	2.47	0.005
4.09E-06	3.75E-07	5.32	0.013
8.90E-07	9.67E-08	1.10	0.002
1.32E-06	1.40E-07	1.65	0.003
1.54E-06	1.60E-07	1.94	0.004
1.88E-06	1.89E-07	2.39	0.005
2.47E-06	2.24E-07	3.22	0.008
3.20E-06	2.65E-07	4.27	0.012
3.92E-06	3.09E-07	5.30	0.016
8.69E-07	9.41E-08	1.08	0.002
1.25E-06	1.32E-07	1.57	0.003
1.45E-06	1.50E-07	1.83	0.003
3.22E-06	2.35E-07	4.42	0.014

7.25E-06	7.10E-07	9.26	0.019
6.52E-06	6.74E-07	8.20	0.015
7.75E-07	8.20E-08	0.97	0.002
8.53E-07	8.96E-08	1.07	0.002
1.05E-06	1.08E-07	1.33	0.003
1.18E-06	1.19E-07	1.50	0.003
3.31E-06	1.93E-07	4.72	0.018
3.94E-06	2.05E-07	5.71	0.023
4.67E-06	2.10E-07	6.89	0.030
4.62E-06	2.05E-07	6.83	0.030
3.11E-06	1.95E-07	4.38	0.016
2.17E-06	1.82E-07	2.88	0.008
1.80E-06	1.68E-07	2.33	0.005
1.50E-06	1.49E-07	1.91	0.004
1.10E-06	1.15E-07	1.38	0.003
7.50E-07	7.86E-08	0.94	0.002
8.18E-07	8.50E-08	1.03	0.002
1.01E-06	1.02E-07	1.29	0.003
1.14E-06	1.12E-07	1.45	0.003
2.68E-06	1.72E-07	3.75	0.014
3.07E-06	1.80E-07	4.38	0.017
3.55E-06	1.84E-07	5.15	0.021
3.97E-06	1.84E-07	5.83	0.025
3.37E-06	1.82E-07	4.86	0.019
2.58E-06	1.74E-07	3.59	0.012
1.92E-06	1.62E-07	2.55	0.007
1.65E-06	1.51E-07	2.14	0.005
1.46E-06	1.41E-07	1.87	0.004
7.24E-07	7.52E-08	0.91	0.002
7.86E-07	8.09E-08	0.99	0.002
8.65E-07	8.78E-08	1.10	0.002
9.64E-07	9.59E-08	1.23	0.003
1.09E-06	1.05E-07	1.39	0.003
1.23E-06	1.14E-07	1.60	0.004
1.43E-06	1.25E-07	1.89	0.005
1.68E-06	1.35E-07	2.26	0.007
1.95E-06	1.45E-07	2.67	0.009
2.23E-06	1.54E-07	3.08	0.011
2.49E-06	1.60E-07	3.50	0.013
2.64E-06	1.58E-07	3.74	0.014
2.70E-06	1.58E-07	3.86	0.015
2.60E-06	1.61E-07	3.67	0.014
2.11E-06	1.55E-07	2.89	0.009
1.56E-06	1.33E-07	2.07	0.006
1.39E-06	1.28E-07	1.80	0.004
1.35E-06	1.29E-07	1.74	0.004
1.11E-06	1.11E-07	1.41	0.003

6.94E-07	7.15E-08	0.88	0.002
7.51E-07	7.67E-08	0.95	0.002
8.28E-07	8.32E-08	1.05	0.002
9.17E-07	9.02E-08	1.17	0.003
1.02E-06	9.81E-08	1.32	0.003
1.15E-06	1.07E-07	1.50	0.004
1.31E-06	1.15E-07	1.73	0.005
1.50E-06	1.24E-07	2.01	0.006
1.70E-06	1.32E-07	2.31	0.007
1.85E-06	1.38E-07	2.52	0.008
1.93E-06	1.36E-07	2.67	0.009
1.92E-06	1.31E-07	2.67	0.009
1.90E-06	1.28E-07	2.64	0.009
1.88E-06	1.33E-07	2.59	0.009
1.57E-06	1.23E-07	2.12	0.006
1.26E-06	1.09E-07	1.66	0.004
1.10E-06	1.03E-07	1.43	0.003
1.04E-06	1.01E-07	1.33	0.003
8.68E-07	8.77E-08	1.10	0.002
6.62E-07	6.78E-08	0.84	0.002
7.05E-07	7.25E-08	0.89	0.002
7.88E-07	7.85E-08	1.00	0.002
8.68E-07	8.49E-08	1.11	0.002
9.61E-07	9.17E-08	1.24	0.003
1.07E-06	9.91E-08	1.40	0.003
1.20E-06	1.07E-07	1.58	0.004
1.35E-06	1.14E-07	1.80	0.005
1.50E-06	1.20E-07	2.02	0.006
1.55E-06	1.21E-07	2.10	0.006
1.57E-06	1.18E-07	2.14	0.007
1.53E-06	1.12E-07	2.10	0.007
1.53E-06	1.12E-07	2.10	0.007
1.58E-06	1.19E-07	2.15	0.007
1.38E-06	1.12E-07	1.85	0.005
1.16E-06	1.01E-07	1.53	0.004
1.01E-06	9.36E-08	1.31	0.003
8.91E-07	8.65E-08	1.14	0.003
7.93E-07	7.97E-08	1.01	0.002
8.14E-07	8.33E-08	1.03	0.002
5.03E-06	2.30E-07	7.41	0.032
3.92E-06	2.11E-07	5.65	0.023
1.43E-06	1.46E-07	1.81	0.004
1.77E-06	1.65E-07	2.30	0.005
9.20E-07	1.02E-07	1.14	0.002
4.82E-06	5.17E-07	6.00	0.010
5.24E-06	5.53E-07	6.54	0.011
6.29E-06	7.29E-07	7.65	0.011

6.35E-06	7.19E-07	7.75	0.011
4.72E-06	5.28E-07	5.79	0.008
2.04E-06	2.11E-07	2.57	0.005
3.37E-06	2.34E-07	4.66	0.016
3.89E-06	2.57E-07	5.43	0.019
6.59E-06	5.65E-07	8.72	0.023
4.54E-06	5.02E-07	5.58	0.008
3.60E-06	4.14E-07	4.37	0.006
2.98E-06	3.42E-07	3.62	0.005
3.04E-06	3.51E-07	3.72	0.006
2.67E-06	3.08E-07	3.27	0.005
2.89E-06	3.33E-07	3.53	0.005
2.34E-06	2.69E-07	2.86	0.005
2.30E-06	2.65E-07	2.83	0.005
3.49E-06	4.03E-07	4.27	0.007
2.37E-06	2.73E-07	2.94	0.006
2.61E-06	3.03E-07	3.53	0.020
3.39E-06	3.94E-07	4.17	0.008

AERMOD (: 91): C:\Lakes\A
AERMET (1 34):
MODELING IONS USED: Re
PLOT FILE OF ANNUAL
FOR A TOTAL OF 53
FORM AT: (3(1X,F13.5

X	Y	Lookup	ARLN1	PAREA1	PAREA2
689212.05	4283551.6	689212.05_4283551.57	0.43025	0.26073	0.09352
689262.05	4283551.6	689262.05_4283551.57	0.47193	0.30767	0.10408
689312.05	4283551.6	689312.05_4283551.57	0.59882	0.36818	0.11542
689362.05	4283551.6	689362.05_4283551.57	0.78694	0.45175	0.1284
689412.05	4283551.6	689412.05_4283551.57	1.06246	0.57582	0.1433
689212.05	4283601.6	689212.05_4283601.57	0.40812	0.27321	0.09697
689262.05	4283601.6	689262.05_4283601.57	0.44414	0.32394	0.10815
689312.05	4283601.6	689312.05_4283601.57	0.58906	0.38799	0.11882
689362.05	4283601.6	689362.05_4283601.57	0.74731	0.48058	0.13297
689412.05	4283601.6	689412.05_4283601.57	0.97764	0.62184	0.14949
689262.05	4283651.6	689262.05_4283651.57	0.41601	0.34175	0.11387
689312.05	4283651.6	689312.05_4283651.57	0.56137	0.4098	0.12406
689362.05	4283651.6	689362.05_4283651.57	0.72591	0.50757	0.13703
689412.05	4283651.6	689412.05_4283651.57	0.89437	0.67039	0.1563
689212.05	4283701.6	689212.05_4283701.57	0.35525	0.29994	0.10612
689262.05	4283701.6	689262.05_4283701.57	0.4138	0.3587	0.11832
689312.05	4283701.6	689312.05_4283701.57	0.53494	0.43254	0.12891
689362.05	4283701.6	689362.05_4283701.57	0.6854	0.53907	0.14151
689412.05	4283701.6	689412.05_4283701.57	0.83803	0.73172	0.1615
689062.05	4283751.6	689062.05_4283751.57	0.30954	0.20522	0.084
689212.05	4283751.6	689212.05_4283751.57	0.37807	0.31084	0.10806
689262.05	4283751.6	689262.05_4283751.57	0.42595	0.37227	0.11982
689312.05	4283751.6	689312.05_4283751.57	0.55149	0.45128	0.13028
689362.05	4283751.6	689362.05_4283751.57	0.64788	0.57755	0.14683
689262.05	4283801.6	689262.05_4283801.57	0.47458	0.38434	0.12053
689312.05	4283801.6	689312.05_4283801.57	0.54274	0.47544	0.13443
689362.05	4283801.6	689362.05_4283801.57	0.6239	0.61916	0.1526
689412.05	4283801.6	689412.05_4283801.57	0.72472	0.89177	0.17666
689212.05	4283851.6	689212.05_4283851.57	0.42529	0.33531	0.11376
689262.05	4283851.6	689262.05_4283851.57	0.47913	0.40217	0.12498
689312.05	4283851.6	689312.05_4283851.57	0.52749	0.50092	0.13944
689362.05	4283851.6	689362.05_4283851.57	0.58738	0.65867	0.15807
689412.05	4283851.6	689412.05_4283851.57	0.69603	0.94631	0.17904
689062.05	4283901.6	689062.05_4283901.57	0.24942	0.2315	0.08792
689112.05	4283901.6	689112.05_4283901.57	0.31404	0.2602	0.09718
689162.05	4283901.6	689162.05_4283901.57	0.36327	0.29872	0.10736
689212.05	4283901.6	689212.05_4283901.57	0.40987	0.35033	0.11822
689262.05	4283901.6	689262.05_4283901.57	0.45608	0.42154	0.13048
689312.05	4283901.6	689312.05_4283901.57	0.49299	0.52685	0.14542
689362.05	4283901.6	689362.05_4283901.57	0.56773	0.69113	0.16244
689412.05	4283901.6	689412.05_4283901.57	0.65978	0.99552	0.18327
689062.05	4283951.6	689062.05_4283951.57	0.23383	0.24068	0.08883
689112.05	4283951.6	689112.05_4283951.57	0.29719	0.27113	0.09912
689162.05	4283951.6	689162.05_4283951.57	0.33481	0.31248	0.11117
689212.05	4283951.6	689212.05_4283951.57	0.37982	0.36659	0.12323
689262.05	4283951.6	689262.05_4283951.57	0.42498	0.44081	0.13625
689312.05	4283951.6	689312.05_4283951.57	0.4706	0.55019	0.15122

689362.05	4283951.6	689362.05_4283951.57	0.52751	0.72689	0.16957
689412.05	4283951.6	689412.05_4283951.57	0.60071	1.05816	0.19296
689062.05	4284001.6	689062.05_4284001.57	0.24077	0.24802	0.08859
689112.05	4284001.6	689112.05_4284001.57	0.28569	0.28166	0.10037
689162.05	4284001.6	689162.05_4284001.57	0.30658	0.32628	0.11472
689212.05	4284001.6	689212.05_4284001.57	0.33396	0.38437	0.12925
689262.05	4284001.6	689262.05_4284001.57	0.38162	0.46155	0.14308
689312.05	4284001.6	689312.05_4284001.57	0.43468	0.57534	0.15857
689362.05	4284001.6	689362.05_4284001.57	0.49345	0.76116	0.17761
689412.05	4284001.6	689412.05_4284001.57	0.54916	1.11891	0.20362
689062.05	4284051.6	689062.05_4284051.57	0.26126	0.25333	0.08822
689112.05	4284051.6	689112.05_4284051.57	0.27944	0.29029	0.10089
689162.05	4284051.6	689162.05_4284051.57	0.28513	0.33846	0.11728
689212.05	4284051.6	689212.05_4284051.57	0.30079	0.40216	0.1354
689262.05	4284051.6	689262.05_4284051.57	0.34219	0.48554	0.15214
689312.05	4284051.6	689312.05_4284051.57	0.39342	0.6047	0.16848
689362.05	4284051.6	689362.05_4284051.57	0.4561	0.79722	0.18729
689412.05	4284051.6	689412.05_4284051.57	0.49699	1.19369	0.21827
689112.05	4284101.6	689112.05_4284101.57	0.26384	0.29752	0.10225
689162.05	4284101.6	689162.05_4284101.57	0.27433	0.34765	0.11862
689212.05	4284101.6	689212.05_4284101.57	0.29213	0.41388	0.13808
689262.05	4284101.6	689262.05_4284101.57	0.31818	0.50649	0.15999
689312.05	4284101.6	689312.05_4284101.57	0.36768	0.62829	0.17673
689362.05	4284101.6	689362.05_4284101.57	0.42816	0.8289	0.19654
689412.05	4284101.6	689412.05_4284101.57	0.44209	1.31208	0.24325
689162.05	4284151.6	689162.05_4284151.57	0.25393	0.35776	0.12239
689212.05	4284151.6	689212.05_4284151.57	0.2875	0.42194	0.13953
689262.05	4284151.6	689262.05_4284151.57	0.30598	0.51585	0.16216
689312.05	4284151.6	689312.05_4284151.57	0.33815	0.65569	0.18739
689362.05	4284151.6	689362.05_4284151.57	0.39776	0.86627	0.20754
689412.05	4284151.6	689412.05_4284151.57	0.40059	1.47648	0.2689
689212.05	4284201.6	689212.05_4284201.57	0.26621	0.4325	0.14469
689262.05	4284201.6	689262.05_4284201.57	0.29509	0.52489	0.16551
689312.05	4284201.6	689312.05_4284201.57	0.32261	0.67212	0.19362
689362.05	4284201.6	689362.05_4284201.57	0.32863	1.04161	0.25421
689412.05	4284201.6	689412.05_4284201.57	0.34666	1.75191	0.25754
689262.05	4284251.6	689262.05_4284251.57	0.27099	0.53802	0.17426
689312.05	4284251.6	689312.05_4284251.57	0.2892	0.7156	0.21343
689062.05	4284301.6	689062.05_4284301.57	0.20234	0.26782	0.12282
689112.05	4284301.6	689112.05_4284301.57	0.20487	0.31315	0.13218
689162.05	4284301.6	689162.05_4284301.57	0.21671	0.36901	0.14354
689062.05	4284451.6	689062.05_4284451.57	0.18832	0.26929	0.16844
689062.05	4284501.6	689062.05_4284501.57	0.17415	0.2703	0.18894
689112.05	4284501.6	689112.05_4284501.57	0.18922	0.30947	0.19658
689062.05	4284551.6	689062.05_4284551.57	0.15716	0.2733	0.21147
689112.05	4284551.6	689112.05_4284551.57	0.17623	0.30846	0.21984
689162.05	4284551.6	689162.05_4284551.57	0.19468	0.35649	0.23141
689969.65	4283460.3	689969.65_4283460.34	1.06165	1.53146	0.14967
690019.65	4283460.3	690019.65_4283460.34	0.7102	1.01726	0.1532
690069.65	4283460.3	690069.65_4283460.34	0.51995	0.77568	0.15855
690119.65	4283460.3	690119.65_4283460.34	0.40898	0.63336	0.16531
690169.65	4283460.3	690169.65_4283460.34	0.33314	0.53728	0.17228
690219.65	4283460.3	690219.65_4283460.34	0.28344	0.46817	0.17969
689969.65	4283510.3	689969.65_4283510.34	1.06742	1.46556	0.15834
690019.65	4283510.3	690019.65_4283510.34	0.74276	1.01826	0.16337

690069.65	4283510.3	690069.65_4283510.34	0.57464	0.79258	0.1713
690119.65	4283510.3	690119.65_4283510.34	0.46435	0.65239	0.17951
690169.65	4283510.3	690169.65_4283510.34	0.37254	0.55188	0.18692
690219.65	4283510.3	690219.65_4283510.34	0.30322	0.47438	0.19368
689919.65	4283560.3	689919.65_4283560.34	1.63173	2.14079	0.16424
689969.65	4283560.3	689969.65_4283560.34	1.05751	1.40356	0.16855
690019.65	4283560.3	690019.65_4283560.34	0.84323	1.03547	0.17772
690069.65	4283560.3	690069.65_4283560.34	0.60219	0.82454	0.18747
690119.65	4283560.3	690119.65_4283560.34	0.449	0.68013	0.1965
690169.65	4283560.3	690169.65_4283560.34	0.36893	0.56764	0.20352
690219.65	4283560.3	690219.65_4283560.34	0.32239	0.47967	0.20917
689919.65	4283610.3	689919.65_4283610.34	1.58888	1.94681	0.17553
689969.65	4283610.3	689969.65_4283610.34	1.07997	1.35759	0.18169
690019.65	4283610.3	690019.65_4283610.34	0.80667	1.04352	0.19275
690069.65	4283610.3	690069.65_4283610.34	0.53247	0.85527	0.20567
690119.65	4283610.3	690119.65_4283610.34	0.39243	0.70462	0.21665
690169.65	4283610.3	690169.65_4283610.34	0.37599	0.57484	0.2206
690219.65	4283610.3	690219.65_4283610.34	0.34456	0.47688	0.22431
689919.65	4283660.3	689919.65_4283660.34	1.56671	1.85708	0.18874
689969.65	4283660.3	689969.65_4283660.34	1.11738	1.33235	0.19715
690019.65	4283660.3	690019.65_4283660.34	0.72421	1.06049	0.21064
690069.65	4283660.3	690069.65_4283660.34	0.42839	0.88435	0.23019
690119.65	4283660.3	690119.65_4283660.34	0.40342	0.705	0.2338
690169.65	4283660.3	690169.65_4283660.34	0.40542	0.57032	0.23712
690219.65	4283660.3	690219.65_4283660.34	0.3371	0.47025	0.24013
689869.65	4283710.3	689869.65_4283710.34	1.87275	3.00031	0.20275
689919.65	4283710.3	689919.65_4283710.34	1.51338	1.80645	0.20368
689969.65	4283710.3	689969.65_4283710.34	1.10156	1.31015	0.21352
690019.65	4283710.3	690019.65_4283710.34	0.63459	1.0767	0.23136
690069.65	4283710.3	690069.65_4283710.34	0.41814	0.88332	0.25024
690119.65	4283710.3	690119.65_4283710.34	0.43913	0.6944	0.25046
690169.65	4283710.3	690169.65_4283710.34	0.42494	0.56069	0.25463
690219.65	4283710.3	690219.65_4283710.34	0.33496	0.46696	0.25912
689919.65	4283760.3	689919.65_4283760.34	1.38192	1.76879	0.21977
689969.65	4283760.3	689969.65_4283760.34	1.06953	1.29623	0.2323
690019.65	4283760.3	690019.65_4283760.34	0.64148	1.06039	0.25058
690069.65	4283760.3	690069.65_4283760.34	0.47578	0.8579	0.26431
690119.65	4283760.3	690119.65_4283760.34	0.45668	0.68308	0.27019
690169.65	4283760.3	690169.65_4283760.34	0.41089	0.56147	0.27752
690219.65	4283760.3	690219.65_4283760.34	0.35035	0.47802	0.28641
689919.65	4283810.3	689919.65_4283810.34	1.28427	1.74635	0.23909
689969.65	4283810.3	689969.65_4283810.34	1.02148	1.28236	0.25342
690019.65	4283810.3	690019.65_4283810.34	0.64238	1.0497	0.27352
690069.65	4283810.3	690069.65_4283810.34	0.44756	0.85888	0.29088
690119.65	4283810.3	690119.65_4283810.34	0.39988	0.69535	0.29947
690169.65	4283810.3	690169.65_4283810.34	0.34297	0.58079	0.31068
690219.65	4283810.3	690219.65_4283810.34	0.30202	0.48997	0.31816
689919.65	4283860.3	689919.65_4283860.34	1.16411	1.72331	0.26081
689969.65	4283860.3	689969.65_4283860.34	0.95849	1.27172	0.27806
690019.65	4283860.3	690019.65_4283860.34	0.64203	1.04036	0.30018
690069.65	4283860.3	690069.65_4283860.34	0.44997	0.85145	0.31856
690119.65	4283860.3	690119.65_4283860.34	0.37768	0.69673	0.33043
690169.65	4283860.3	690169.65_4283860.34	0.31637	0.58311	0.34265
690219.65	4283860.3	690219.65_4283860.34	0.2906	0.48898	0.3471
689919.65	4283910.3	689919.65_4283910.34	1.07444	1.70862	0.28754

689969.65	4283910.3	689969.65_4283910.34	0.88495	1.26268	0.30696
690019.65	4283910.3	690019.65_4283910.34	0.65616	1.01784	0.32856
690069.65	4283910.3	690069.65_4283910.34	0.46202	0.8428	0.35003
690119.65	4283910.3	690119.65_4283910.34	0.34945	0.69932	0.36757
690169.65	4283910.3	690169.65_4283910.34	0.29171	0.5842	0.37879
690219.65	4283910.3	690219.65_4283910.34	0.26971	0.48994	0.38098
689919.65	4283960.3	689919.65_4283960.34	0.95391	1.69378	0.31933
689969.65	4283960.3	689969.65_4283960.34	0.7747	1.2706	0.34326
690019.65	4283960.3	690019.65_4283960.34	0.58509	1.02391	0.36716
690069.65	4283960.3	690069.65_4283960.34	0.43584	0.8412	0.38958
690119.65	4283960.3	690119.65_4283960.34	0.32552	0.70389	0.41318
690169.65	4283960.3	690169.65_4283960.34	0.27279	0.58425	0.41902
690219.65	4283960.3	690219.65_4283960.34	0.27249	0.48404	0.41202
689919.65	4284010.3	689919.65_4284010.34	0.85406	1.66217	0.35531
689969.65	4284010.3	689969.65_4284010.34	0.70789	1.25766	0.38265
690019.65	4284010.3	690019.65_4284010.34	0.53958	1.02135	0.41051
690069.65	4284010.3	690069.65_4284010.34	0.39701	0.84567	0.43948
690119.65	4284010.3	690119.65_4284010.34	0.3076	0.71141	0.46844
690169.65	4284010.3	690169.65_4284010.34	0.26483	0.58383	0.46358
690219.65	4284010.3	690219.65_4284010.34	0.27161	0.47938	0.44682
689919.65	4284060.3	689919.65_4284060.34	0.75239	1.64027	0.39986
689969.65	4284060.3	689969.65_4284060.34	0.63211	1.25415	0.43014
690019.65	4284060.3	690019.65_4284060.34	0.47338	1.03033	0.46551
690069.65	4284060.3	690069.65_4284060.34	0.35521	0.86042	0.50662
690119.65	4284060.3	690119.65_4284060.34	0.28483	0.72228	0.53282
690169.65	4284060.3	690169.65_4284060.34	0.26738	0.5802	0.50867
690219.65	4284060.3	690219.65_4284060.34	0.2329	0.48373	0.49462
689969.65	4284110.3	689969.65_4284110.34	0.50176	1.29286	0.49521
690019.65	4284110.3	690019.65_4284110.34	0.38412	1.07033	0.55347
690069.65	4284110.3	690069.65_4284110.34	0.30521	0.93414	0.61589
690119.65	4284110.3	690119.65_4284110.34	0.26375	0.75541	0.6194
690169.65	4284110.3	690169.65_4284110.34	0.25187	0.58452	0.56948
690219.65	4284110.3	690219.65_4284110.34	0.20095	0.49798	0.56328
689969.65	4284160.3	689969.65_4284160.34	0.40678	1.33954	0.58563
690019.65	4284160.3	690019.65_4284160.34	0.32475	1.17001	0.67729
690069.65	4284160.3	690069.65_4284160.34	0.27716	0.93531	0.69168
690119.65	4284160.3	690119.65_4284160.34	0.24028	0.77544	0.70027
690169.65	4284160.3	690169.65_4284160.34	0.214	0.64465	0.68791
690219.65	4284160.3	690219.65_4284160.34	0.20174	0.49388	0.60209
689919.65	4284210.3	689919.65_4284210.34	0.48393	1.6666	0.60056
689969.65	4284210.3	689969.65_4284210.34	0.37112	1.34764	0.67595
690019.65	4284210.3	690019.65_4284210.34	0.30462	1.16545	0.77094
690069.65	4284210.3	690069.65_4284210.34	0.26631	0.93879	0.78244
690119.65	4284210.3	690119.65_4284210.34	0.23536	0.774	0.77764
690169.65	4284210.3	690169.65_4284210.34	0.20779	0.6503	0.75012
690219.65	4284210.3	690219.65_4284210.34	0.18336	0.5268	0.67975
689869.65	4284260.3	689869.65_4284260.34	0.54917	2.34607	0.62819
689919.65	4284260.3	689919.65_4284260.34	0.4952	1.62062	0.68307
689969.65	4284260.3	689969.65_4284260.34	0.36511	1.32393	0.7587
690019.65	4284260.3	690019.65_4284260.34	0.30736	1.08663	0.82733
690069.65	4284260.3	690069.65_4284260.34	0.26724	0.9187	0.87169
690119.65	4284260.3	690119.65_4284260.34	0.241	0.77213	0.86043
690169.65	4284260.3	690169.65_4284260.34	0.20438	0.63784	0.79959
690219.65	4284260.3	690219.65_4284260.34	0.17363	0.53311	0.71729
689919.65	4284310.3	689919.65_4284310.34	0.46296	1.63605	0.79541

689969.65	4284310.3	689969.65_4284310.34	0.39667	1.28067	0.85397
690019.65	4284310.3	690019.65_4284310.34	0.32115	1.05104	0.89607
690069.65	4284310.3	690069.65_4284310.34	0.28551	0.85138	0.89195
690119.65	4284310.3	690119.65_4284310.34	0.24586	0.70752	0.86851
690169.65	4284310.3	690169.65_4284310.34	0.20227	0.61919	0.83271
690219.65	4284310.3	690219.65_4284310.34	0.16773	0.5177	0.73592
689919.65	4284360.3	689919.65_4284360.34	0.40603	1.71605	0.9499
689969.65	4284360.3	689969.65_4284360.34	0.37611	1.305	0.99578
690019.65	4284360.3	690019.65_4284360.34	0.32392	1.04488	1.00717
690069.65	4284360.3	690069.65_4284360.34	0.28406	0.84041	0.96693
690119.65	4284360.3	690119.65_4284360.34	0.24252	0.68992	0.90611
690169.65	4284360.3	690169.65_4284360.34	0.19755	0.60388	0.86383
690219.65	4284360.3	690219.65_4284360.34	0.16529	0.5047	0.75967
689919.65	4284410.3	689919.65_4284410.34	0.38219	1.83096	1.13402
689969.65	4284410.3	689969.65_4284410.34	0.36429	1.34333	1.15856
690019.65	4284410.3	690019.65_4284410.34	0.29336	1.08012	1.15446
690069.65	4284410.3	690069.65_4284410.34	0.25622	0.85246	1.06708
690119.65	4284410.3	690119.65_4284410.34	0.22775	0.68361	0.96055
690169.65	4284410.3	690169.65_4284410.34	0.1908	0.58819	0.898
690219.65	4284410.3	690219.65_4284410.34	0.1625	0.48786	0.78498
689919.65	4284460.3	689919.65_4284460.34	0.36415	2.02245	1.35729
689969.65	4284460.3	689969.65_4284460.34	0.32465	1.44124	1.36579
690019.65	4284460.3	690019.65_4284460.34	0.27511	1.10021	1.28568
690069.65	4284460.3	690069.65_4284460.34	0.2401	0.85831	1.15581
690119.65	4284460.3	690119.65_4284460.34	0.20935	0.67882	1.02841
690169.65	4284460.3	690169.65_4284460.34	0.17873	0.57976	0.94548
690219.65	4284460.3	690219.65_4284460.34	0.15209	0.45491	0.78959
689243.81	4283030.6	689243.81_4283030.64	0.33914	0.17229	0.07898
689293.81	4283030.6	689293.81_4283030.64	0.39126	0.19123	0.08416
689343.81	4283030.6	689343.81_4283030.64	0.46928	0.21225	0.08754
689393.81	4283030.6	689393.81_4283030.64	0.60239	0.23946	0.09086
689443.81	4283030.6	689443.81_4283030.64	0.84854	0.27358	0.0927
689493.81	4283030.6	689493.81_4283030.64	1.24518	0.31594	0.09343
689543.81	4283030.6	689543.81_4283030.64	1.75786	0.36866	0.09427
689243.81	4283080.6	689243.81_4283080.64	0.37954	0.1824	0.08074
689293.81	4283080.6	689293.81_4283080.64	0.47238	0.2042	0.08606
689343.81	4283080.6	689343.81_4283080.64	0.56454	0.23025	0.09096
689393.81	4283080.6	689393.81_4283080.64	0.70348	0.26145	0.09447
689443.81	4283080.6	689443.81_4283080.64	1.03123	0.30235	0.0967
689493.81	4283080.6	689493.81_4283080.64	1.67889	0.35869	0.09799
689543.81	4283080.6	689543.81_4283080.64	2.55667	0.43158	0.09849
689243.81	4283130.6	689243.81_4283130.64	0.33314	0.19325	0.08475
689293.81	4283130.6	689293.81_4283130.64	0.37234	0.22105	0.09263
689343.81	4283130.6	689343.81_4283130.64	0.51575	0.25171	0.09737
689393.81	4283130.6	689393.81_4283130.64	0.80691	0.28818	0.10015
689443.81	4283130.6	689443.81_4283130.64	1.30125	0.33773	0.10166
689493.81	4283130.6	689493.81_4283130.64	2.5716	0.41868	0.10258
689543.81	4283130.6	689543.81_4283130.64	4.27861	0.53612	0.10277
689243.81	4283180.6	689243.81_4283180.64	0.26516	0.20041	0.08757
689293.81	4283180.6	689293.81_4283180.64	0.32422	0.23136	0.09649
689343.81	4283180.6	689343.81_4283180.64	0.44502	0.26923	0.10376
689393.81	4283180.6	689393.81_4283180.64	0.82176	0.31259	0.10584
689443.81	4283180.6	689443.81_4283180.64	1.74296	0.37707	0.10693
689493.81	4283180.6	689493.81_4283180.64	5.16993	0.52756	0.10762
689543.81	4283180.6	689543.81_4283180.64	8.46208	0.75384	0.10771

689243.81	4283230.6	689243.81_4283230.64	0.25449	0.20645	0.0891
689293.81	4283230.6	689293.81_4283230.64	0.28997	0.23902	0.09895
689343.81	4283230.6	689343.81_4283230.64	0.3911	0.27813	0.10655
689393.81	4283230.6	689393.81_4283230.64	0.716	0.32678	0.10972
689443.81	4283230.6	689443.81_4283230.64	1.82553	0.406	0.11159
689243.81	4283280.6	689243.81_4283280.64	0.26878	0.21522	0.0906
689293.81	4283280.6	689293.81_4283280.64	0.30331	0.2496	0.10068
689343.81	4283280.6	689343.81_4283280.64	0.43291	0.29022	0.10812
689393.81	4283280.6	689393.81_4283280.64	0.8531	0.34495	0.11278
689443.81	4283280.6	689443.81_4283280.64	2.71837	0.44863	0.11562
689243.81	4283330.6	689243.81_4283330.64	0.29793	0.2255	0.09149
689293.81	4283330.6	689293.81_4283330.64	0.38899	0.26164	0.10054
689343.81	4283330.6	689343.81_4283330.64	0.63324	0.30783	0.10824
689393.81	4283330.6	689393.81_4283330.64	1.20662	0.37628	0.11501
689443.81	4283330.6	689443.81_4283330.64	2.94359	0.51675	0.12063
689493.81	4283330.6	689493.81_4283330.64	7.84795	0.88837	0.12302
689243.81	4283380.6	689243.81_4283380.64	0.33372	0.23878	0.09298
689293.81	4283380.6	689293.81_4283380.64	0.43471	0.27897	0.1025
689343.81	4283380.6	689343.81_4283380.64	0.6331	0.33453	0.11278
689393.81	4283380.6	689393.81_4283380.64	1.12158	0.41561	0.12139
689443.81	4283380.6	689443.81_4283380.64	2.24201	0.55426	0.12837
689243.81	4283430.6	689243.81_4283430.64	0.38186	0.25349	0.09492
689293.81	4283430.6	689293.81_4283430.64	0.4896	0.2978	0.10493
689343.81	4283430.6	689343.81_4283430.64	0.67848	0.35969	0.1162
689393.81	4283430.6	689393.81_4283430.64	1.07007	0.45045	0.12733
689443.81	4283430.6	689443.81_4283430.64	1.80947	0.58837	0.13727
689243.81	4283480.6	689243.81_4283480.64	0.40876	0.26845	0.09708
689293.81	4283480.6	689293.81_4283480.64	0.51283	0.31715	0.10751
689343.81	4283480.6	689343.81_4283480.64	0.71555	0.38342	0.11904
689393.81	4283480.6	689393.81_4283480.64	1.0348	0.47971	0.1314
689443.81	4283480.6	689443.81_4283480.64	1.55861	0.62204	0.14346
689493.81	4283480.6	689493.81_4283480.64	2.22364	0.82529	0.15464
689584.29	4283182	689584.29_4283182	7.81803	0.87638	0.10803
689626.46	4283180.8	689626.46_4283180.77	7.12234	0.96038	0.10751
689581.46	4283081.8	689581.46_4283081.75	3.09108	0.49338	0.09834
689586.89	4283032.1	689586.89_4283032.14	2.17659	0.41885	0.09398
689628.89	4283033.2	689628.89_4283033.23	2.54808	0.46991	0.09411
690123.39	4283039.1	690123.39_4283039.13	0.83898	0.55376	0.10209
690123.39	4283089.1	690123.39_4283089.13	0.81654	0.58373	0.10779
690173.39	4283089.1	690173.39_4283089.13	0.61771	0.51951	0.11266
689923.39	4283139.1	689923.39_4283139.13	1.97323	1.14146	0.10438
689950.32	4283366.6	689950.32_4283366.56	1.15666	2.05737	0.13467
690000.32	4283366.6	690000.32_4283366.56	0.73343	1.22846	0.13999
689946.72	4283397.8	689946.72_4283397.81	1.10528	2.16442	0.13962
689990.74	4283392	689990.74_4283391.96	0.76175	1.3303	0.14308
690047.5	4284607.9	690047.5_4284607.9	0.21594	0.93571	1.42284
690097.5	4284607.9	690097.5_4284607.9	0.20305	0.6276	1.15219
690147.5	4284607.9	690147.5_4284607.9	0.18392	0.49068	0.95612
690197.5	4284607.9	690197.5_4284607.9	0.15947	0.42361	0.86129
690047.5	4284657.9	690047.5_4284657.9	0.21548	0.8817	1.43226
690097.5	4284657.9	690097.5_4284657.9	0.20069	0.58777	1.13325
690147.5	4284657.9	690147.5_4284657.9	0.18069	0.46732	0.91784
690197.5	4284657.9	690197.5_4284657.9	0.15391	0.40923	0.82627
689997.5	4284707.9	689997.5_4284707.9	0.21851	1.39821	1.84796
690097.5	4284707.9	690097.5_4284707.9	0.19317	0.58103	1.09354

690147.5	4284707.9	690147.5_4284707.9	0.17477	0.46034	0.87041
690197.5	4284707.9	690197.5_4284707.9	0.15044	0.39921	0.76057
690047.5	4284757.9	690047.5_4284757.9	0.1922	0.79713	1.35801
690097.5	4284757.9	690097.5_4284757.9	0.18051	0.57575	1.03301
690147.5	4284757.9	690147.5_4284757.9	0.17003	0.4527	0.80515
690197.5	4284757.9	690197.5_4284757.9	0.14931	0.38763	0.67198
689947.5	4284807.9	689947.5_4284807.9	0.19665	1.13689	2.49983
690047.5	4284807.9	690047.5_4284807.9	0.18065	0.72104	1.26873
690097.5	4284807.9	690097.5_4284807.9	0.16838	0.56071	0.95432
690147.5	4284807.9	690147.5_4284807.9	0.16065	0.44588	0.73553
690197.5	4284807.9	690197.5_4284807.9	0.14681	0.37699	0.5933
689897.5	4284857.9	689897.5_4284857.9	0.19622	1.12199	3.72949
689947.5	4284857.9	689947.5_4284857.9	0.18558	0.97409	2.45781
689997.5	4284857.9	689997.5_4284857.9	0.17845	0.8152	1.65878
690047.5	4284857.9	690047.5_4284857.9	0.17003	0.6612	1.16847
690097.5	4284857.9	690097.5_4284857.9	0.15873	0.53746	0.86919
690147.5	4284857.9	690147.5_4284857.9	0.14726	0.44298	0.674
690197.5	4284857.9	690197.5_4284857.9	0.13668	0.37553	0.54322
690247.5	4284857.9	690247.5_4284857.9	0.12392	0.33399	0.47295
689847.5	4284907.9	689847.5_4284907.9	0.18916	1.10673	6.58118
689897.5	4284907.9	689897.5_4284907.9	0.18381	0.97425	3.82946
689947.5	4284907.9	689947.5_4284907.9	0.17746	0.84813	2.35832
689997.5	4284907.9	689997.5_4284907.9	0.16988	0.72667	1.53477
690047.5	4284907.9	690047.5_4284907.9	0.15919	0.61169	1.067
690097.5	4284907.9	690097.5_4284907.9	0.15135	0.51018	0.7812
690147.5	4284907.9	690147.5_4284907.9	0.13911	0.43307	0.60664
690197.5	4284907.9	690197.5_4284907.9	0.12919	0.37108	0.4918
690247.5	4284907.9	690247.5_4284907.9	0.11986	0.32602	0.41786
689797.5	4284957.9	689797.5_4284957.9	0.18288	1.05204	13.10279
689847.5	4284957.9	689847.5_4284957.9	0.17583	0.96432	6.99986
689897.5	4284957.9	689897.5_4284957.9	0.1711	0.86034	3.86502
689947.5	4284957.9	689947.5_4284957.9	0.16718	0.75449	2.19647
689997.5	4284957.9	689997.5_4284957.9	0.16247	0.65418	1.38657
690047.5	4284957.9	690047.5_4284957.9	0.1525	0.56361	0.95582
690097.5	4284957.9	690097.5_4284957.9	0.14288	0.48515	0.70221
690147.5	4284957.9	690147.5_4284957.9	0.13384	0.41766	0.54399
690197.5	4284957.9	690197.5_4284957.9	0.12495	0.36155	0.44122
690247.5	4284957.9	690247.5_4284957.9	0.11583	0.31863	0.37545
689897.5	4285007.9	689897.5_4285007.9	0.16197	0.76309	3.65127
689947.5	4285007.9	689947.5_4285007.9	0.16159	0.67174	1.9388
689997.5	4285007.9	689997.5_4285007.9	0.15552	0.59369	1.23252
690047.5	4285007.9	690047.5_4285007.9	0.14781	0.51886	0.85937
690097.5	4285007.9	690097.5_4285007.9	0.14077	0.45249	0.63815
690147.5	4285007.9	690147.5_4285007.9	0.13117	0.39736	0.49819
690197.5	4285007.9	690197.5_4285007.9	0.12128	0.35062	0.40685
690247.5	4285007.9	690247.5_4285007.9	0.11157	0.31223	0.34742
689897.5	4285057.9	689897.5_4285057.9	0.1479	0.69182	3.22771
689947.5	4285057.9	689947.5_4285057.9	0.14656	0.61642	1.79623
689997.5	4285057.9	689997.5_4285057.9	0.14582	0.54411	1.15643
690047.5	4285057.9	690047.5_4285057.9	0.14187	0.48094	0.81642
690097.5	4285057.9	690097.5_4285057.9	0.13728	0.42367	0.61012
690147.5	4285057.9	690147.5_4285057.9	0.12824	0.37739	0.47874
690197.5	4285057.9	690197.5_4285057.9	0.11792	0.33844	0.39267
690247.5	4285057.9	690247.5_4285057.9	0.10806	0.30462	0.33539
689970.15	4284514.1	689970.15_4284514.09	0.27091	1.6292	1.6268

690020.15	4284514.1	690020.15_4284514.09	0.24527	1.15458	1.43611
690070.15	4284514.1	690070.15_4284514.09	0.21944	0.84707	1.23163
690120.15	4284514.1	690120.15_4284514.09	0.19599	0.65226	1.0815
690170.15	4284514.1	690170.15_4284514.09	0.17117	0.54572	0.97743
690220.15	4284514.1	690220.15_4284514.09	0.14958	0.43273	0.81125
690020.15	4284564.1	690020.15_4284564.09	0.23051	1.19893	1.54025
690070.15	4284564.1	690070.15_4284564.09	0.20821	0.82066	1.28891
690120.15	4284564.1	690120.15_4284564.09	0.19391	0.59997	1.07507
690170.15	4284564.1	690170.15_4284564.09	0.17176	0.4915	0.95459
690220.15	4284564.1	690220.15_4284564.09	0.1526	0.41874	0.83251
689216.55	4284759	689216.55_4284758.96	0.17116	0.37618	0.35525
689266.55	4284759	689266.55_4284758.96	0.1782	0.43743	0.40503
689316.55	4284759	689316.55_4284758.96	0.18964	0.50841	0.46183
689366.55	4284759	689366.55_4284758.96	0.20383	0.59327	0.53773
689416.55	4284759	689416.55_4284758.96	0.21678	0.70252	0.64351
689466.55	4284759	689466.55_4284758.96	0.22704	0.85809	0.80077
689516.55	4284759	689516.55_4284758.96	0.23346	1.12407	1.03865
689216.55	4284809	689216.55_4284808.96	0.16304	0.3647	0.37069
689266.55	4284809	689266.55_4284808.96	0.17021	0.42026	0.43194
689316.55	4284809	689316.55_4284808.96	0.1805	0.4846	0.50108
689366.55	4284809	689366.55_4284808.96	0.19332	0.56159	0.5903
689416.55	4284809	689416.55_4284808.96	0.20598	0.65982	0.72221
689566.55	4284809	689566.55_4284808.96	0.2226	1.34995	1.72164
689216.55	4284859	689216.55_4284858.96	0.15532	0.35328	0.37262
689266.55	4284859	689266.55_4284858.96	0.1647	0.40111	0.44276
689316.55	4284859	689316.55_4284858.96	0.17298	0.46128	0.53195
689366.55	4284859	689366.55_4284858.96	0.18315	0.53365	0.64323
689466.55	4284859	689466.55_4284858.96	0.20246	0.74312	1.07005
689516.55	4284859	689516.55_4284858.96	0.20537	0.91904	1.52684
689566.55	4284859	689566.55_4284858.96	0.20744	1.19777	2.25809
689666.55	4284859	689666.55_4284858.96	0.21619	1.86476	5.336
689266.55	4284909	689266.55_4284908.96	0.15809	0.38444	0.43261
689316.55	4284909	689316.55_4284908.96	0.16625	0.43875	0.53675
689366.55	4284909	689366.55_4284908.96	0.17489	0.50517	0.67814
689416.55	4284909	689416.55_4284908.96	0.18413	0.58602	0.8782
689466.55	4284909	689466.55_4284908.96	0.19186	0.68841	1.22733
689616.55	4284909	689616.55_4284908.96	0.19874	1.2786	4.69499
689216.55	4284959	689216.55_4284958.96	0.14135	0.32931	0.33182
689366.55	4284959	689366.55_4284958.96	0.1681	0.47516	0.67041
689416.55	4284959	689416.55_4284958.96	0.17669	0.54545	0.91962
689466.55	4284959	689466.55_4284958.96	0.17793	0.64428	1.42022
689516.55	4284959	689516.55_4284958.96	0.18104	0.76151	2.96137
689566.55	4284959	689566.55_4284958.96	0.18398	0.90363	4.98685
689616.55	4284959	689616.55_4284958.96	0.18666	1.05197	6.86951
689216.55	4285009	689216.55_4285008.96	0.13388	0.32047	0.33764
689366.55	4285009	689366.55_4285008.96	0.15878	0.45064	0.6454
689416.55	4285009	689416.55_4285008.96	0.16559	0.51131	0.88315
689566.55	4285009	689566.55_4285008.96	0.17128	0.80027	6.50572
689712.61	4284806.3	689712.61_4284806.28	0.2313	2.4171	6.2836
689665.5	4284822.9	689665.5_4284822.91	0.22802	2.29365	4.03835
689153.77	4285125.1	689153.77_4285125.11	0.10584	0.27927	0.38944
689203.77	4285125.1	689203.77_4285125.11	0.11154	0.30528	0.45991
689303.77	4285125.1	689303.77_4285125.11	0.12485	0.36744	0.68295
689353.77	4285125.1	689353.77_4285125.11	0.13182	0.40465	0.87517
689603.77	4285125.1	689603.77_4285125.11	0.14917	0.65713	8.91359

689653.77	4285125.1	689653.77_4285125.11	0.14929	0.69717	11.73884
689703.77	4285125.1	689703.77_4285125.11	0.14579	0.71535	15.42403
689803.77	4285125.1	689803.77_4285125.11	0.14103	0.69786	15.40201
689853.77	4285125.1	689853.77_4285125.11	0.13578	0.66521	7.71166
689903.77	4285125.1	689903.77_4285125.11	0.12846	0.62012	3.26582
689953.77	4285125.1	689953.77_4285125.11	0.12272	0.57182	1.9349
690003.77	4285125.1	690003.77_4285125.11	0.12319	0.50756	1.21172
690103.77	4285125.1	690103.77_4285125.11	0.12422	0.39287	0.61719
689153.77	4285175.1	689153.77_4285175.11	0.10193	0.26766	0.41441
689203.77	4285175.1	689203.77_4285175.11	0.10554	0.28953	0.48594
689303.77	4285175.1	689303.77_4285175.11	0.1189	0.34795	0.74526
689353.77	4285175.1	689353.77_4285175.11	0.12622	0.38032	0.96854
689603.77	4285175.1	689603.77_4285175.11	0.14081	0.58627	6.44946
689653.77	4285175.1	689653.77_4285175.11	0.14049	0.61448	8.20567
689703.77	4285175.1	689703.77_4285175.11	0.13717	0.62736	10.60803
689753.77	4285175.1	689753.77_4285175.11	0.13192	0.6279	12.81715
689803.77	4285175.1	689803.77_4285175.11	0.13102	0.61938	9.73143
689853.77	4285175.1	689853.77_4285175.11	0.12502	0.59292	5.84345
689903.77	4285175.1	689903.77_4285175.11	0.11582	0.55215	2.8627
689953.77	4285175.1	689953.77_4285175.11	0.11123	0.5156	1.88622
690003.77	4285175.1	690003.77_4285175.11	0.11185	0.48081	1.3268
689153.77	4285225.1	689153.77_4285225.11	0.09825	0.25595	0.43487
689203.77	4285225.1	689203.77_4285225.11	0.10179	0.27536	0.5035
689253.77	4285225.1	689253.77_4285225.11	0.10696	0.2989	0.60721
689303.77	4285225.1	689303.77_4285225.11	0.11364	0.32662	0.76671
689353.77	4285225.1	689353.77_4285225.11	0.12102	0.35713	1.00548
689403.77	4285225.1	689403.77_4285225.11	0.12503	0.38967	1.3648
689453.77	4285225.1	689453.77_4285225.11	0.12856	0.42452	1.94401
689503.77	4285225.1	689503.77_4285225.11	0.13208	0.46068	2.80476
689553.77	4285225.1	689553.77_4285225.11	0.1324	0.49503	3.80899
689603.77	4285225.1	689603.77_4285225.11	0.13239	0.52411	4.8744
689653.77	4285225.1	689653.77_4285225.11	0.12956	0.54485	6.02541
689703.77	4285225.1	689703.77_4285225.11	0.12596	0.53971	6.8675
689753.77	4285225.1	689753.77_4285225.11	0.12252	0.53673	7.27733
689803.77	4285225.1	689803.77_4285225.11	0.12198	0.54993	6.53553
689853.77	4285225.1	689853.77_4285225.11	0.11614	0.5279	4.19699
689903.77	4285225.1	689903.77_4285225.11	0.10585	0.45173	2.27377
689953.77	4285225.1	689953.77_4285225.11	0.10248	0.43606	1.55786
690003.77	4285225.1	690003.77_4285225.11	0.10375	0.44098	1.29421
690053.77	4285225.1	690053.77_4285225.11	0.09584	0.37948	0.83061
689153.77	4285275.1	689153.77_4285275.11	0.09423	0.24356	0.43599
689203.77	4285275.1	689203.77_4285275.11	0.09796	0.26104	0.50748
689253.77	4285275.1	689253.77_4285275.11	0.10382	0.28329	0.62388
689303.77	4285275.1	689303.77_4285275.11	0.10927	0.30726	0.77702
689353.77	4285275.1	689353.77_4285275.11	0.11498	0.33404	0.99264
689403.77	4285275.1	689403.77_4285275.11	0.11983	0.36279	1.30369
689453.77	4285275.1	689453.77_4285275.11	0.12318	0.39257	1.75357
689503.77	4285275.1	689503.77_4285275.11	0.12531	0.42249	2.36668
689553.77	4285275.1	689553.77_4285275.11	0.12536	0.44956	3.06905
689603.77	4285275.1	689603.77_4285275.11	0.12367	0.46977	3.57555
689653.77	4285275.1	689653.77_4285275.11	0.11925	0.4642	4.1225
689703.77	4285275.1	689703.77_4285275.11	0.11434	0.44527	4.29918
689753.77	4285275.1	689753.77_4285275.11	0.11126	0.43714	4.27425
689803.77	4285275.1	689803.77_4285275.11	0.11081	0.4517	3.97925
689853.77	4285275.1	689853.77_4285275.11	0.10632	0.4186	2.77319

689903.77	4285275.1	689903.77_4285275.11	0.09879	0.3697	1.75184
689953.77	4285275.1	689953.77_4285275.11	0.09438	0.34972	1.20624
690003.77	4285275.1	690003.77_4285275.11	0.09244	0.34417	0.91731
690053.77	4285275.1	690053.77_4285275.11	0.0868	0.29868	0.63062
689153.77	4285325.1	689153.77_4285325.11	0.0903	0.23098	0.43394
689203.77	4285325.1	689203.77_4285325.11	0.09398	0.24683	0.45567
689253.77	4285325.1	689253.77_4285325.11	0.09964	0.26737	0.62279
689303.77	4285325.1	689303.77_4285325.11	0.10469	0.28895	0.75944
689353.77	4285325.1	689353.77_4285325.11	0.10948	0.3124	0.94308
689403.77	4285325.1	689403.77_4285325.11	0.11388	0.33758	1.20472
689453.77	4285325.1	689453.77_4285325.11	0.11681	0.36294	1.5608
689503.77	4285325.1	689503.77_4285325.11	0.11913	0.3885	2.02789
689553.77	4285325.1	689553.77_4285325.11	0.11872	0.41004	2.51801
689603.77	4285325.1	689603.77_4285325.11	0.11622	0.41081	2.76928
689653.77	4285325.1	689653.77_4285325.11	0.11254	0.40281	3.00199
689703.77	4285325.1	689703.77_4285325.11	0.10773	0.38229	3.07865
689753.77	4285325.1	689753.77_4285325.11	0.10569	0.38203	3.07802
689803.77	4285325.1	689803.77_4285325.11	0.10668	0.40492	2.9911
689853.77	4285325.1	689853.77_4285325.11	0.10136	0.37996	2.27018
689903.77	4285325.1	689903.77_4285325.11	0.09563	0.34474	1.58852
689953.77	4285325.1	689953.77_4285325.11	0.09031	0.31859	1.12403
690003.77	4285325.1	690003.77_4285325.11	0.08601	0.29471	0.80488
690053.77	4285325.1	690053.77_4285325.11	0.08251	0.27126	0.59763
690103.77	4285325.1	690103.77_4285325.11	0.08197	0.28357	0.54268
689653.19	4285078.7	689653.19_4285078.65	0.15883	0.78221	16.46428
689596.53	4285079.8	689596.53_4285079.83	0.15811	0.71928	11.31303
689417.31	4285054.4	689417.31_4285054.43	0.1513	0.49648	0.99402
689465.48	4285057.4	689465.48_4285057.44	0.15375	0.56255	1.91235
689160.76	4284611.2	689160.76_4284611.23	0.1844	0.34682	0.25921
689595.79	4284809.2	689595.79_4284809.16	0.22555	1.7604	2.12495
689614.28	4284828	689614.28_4284828.01	0.22185	1.88306	2.69702
689880.93	4283885.3	689880.93_4283885.33	1.25138	2.48181	0.26706
689878.21	4284393.2	689878.21_4284393.24	0.41019	2.45008	1.00471
689919.3	4284393.5	689919.3_4284393.48	0.38304	1.79658	1.07092
690067.31	4284711.8	690067.31_4284711.79	0.20067	0.71683	1.26995
689854.2	4285030.1	689854.2_4285030.1	0.1596	0.79559	7.33273
689832.17	4285004.4	689832.17_4285004.36	0.16759	0.87675	9.05566
689709.9	4284847.9	689709.9_4284847.93	0.2179	1.92266	9.43563
689566.83	4284730.6	689566.83_4284730.6	0.2479	1.71005	1.27472
689380.2	4284259.8	689380.2_4284259.82	0.31326	1.41023	0.28447
689367.58	4284231.4	689367.58_4284231.36	0.31676	1.16432	0.26727
689441.09	4283793	689441.09_4283793	0.8153	1.19671	0.18999
689436.64	4283733.9	689436.64_4283733.85	0.8225	1.04969	0.19095
689439.11	4283767.8	689439.11_4283767.76	0.8084	1.13404	0.19093
689436.64	4283689.1	689436.64_4283689.05	0.89142	0.91593	0.1817
689444.06	4283650.4	689444.06_4283650.43	0.96625	0.90247	0.18287
689500.74	4283585.6	689500.74_4283585.58	1.38232	1.37336	0.18991
689505.94	4283507.9	689505.94_4283507.86	2.12207	0.9305	0.16141
689546.04	4283356.6	689546.04_4283356.63	10.9784	1.03026	0.12652
689912.61	4283166	689912.61_4283166.04	2.07501	1.34183	0.10704
CONCUNIT ı /m^3		CONCUNIT ug_/m^3			
DEPUNIT g/ ^2		DEPUNIT g/m_^2			

AERMOD (19 91): C:\Lakes\ ERMOD View\ rado Oaks-ne wEVA\Dor ado Oak s-newEVA .isc
AERMET (14134):
MODELING O IONS USED: gDFAULT COI ELEV FLGP OL RURA L
PLOT FILE OF ANNU VALUES AVER GED ACROSS 5 YEARS FOR SO URCE GRO UP: ARLN1
FOR A TOTAL OF 7 RECEPTORS.
FORM AT: (3(1X,F13.),3(1X,F8.2), 2X,A6,2X,A8, 2X,I8.8, 2X,A8)
X Y AVERAGE COI ZELEV ZHILL ZFLAG AVE GRP

689212.05	4283551.57	0.43025	529.56	529.56		1.5	ANNUAL	ARLN2
689262.05	4283551.57	0.47193	533	533		1.5	ANNUAL	ARLN2
689312.05	4283551.57	0.59882	534.01	534.01		1.5	ANNUAL	ARLN2
689362.05	4283551.57	0.78694	534.99	550.78		1.5	ANNUAL	ARLN2
689412.05	4283551.57	1.06246	536.9	550.78		1.5	ANNUAL	ARLN2
689212.05	4283601.57	0.40812	531	534.74		1.5	ANNUAL	ARLN2
689262.05	4283601.57	0.44414	534.44	534.44		1.5	ANNUAL	ARLN2
689312.05	4283601.57	0.58906	534.18	534.18		1.5	ANNUAL	ARLN2
689362.05	4283601.57	0.74731	535.56	550.78		1.5	ANNUAL	ARLN2
689412.05	4283601.57	0.97764	537.51	550.78		1.5	ANNUAL	ARLN2
689262.05	4283651.57	0.41601	536.79	536.79		1.5	ANNUAL	ARLN2
689312.05	4283651.57	0.56137	535.84	535.84		1.5	ANNUAL	ARLN2
689362.05	4283651.57	0.72591	535.52	550.78		1.5	ANNUAL	ARLN2
689412.05	4283651.57	0.89437	538.25	550.78		1.5	ANNUAL	ARLN2
689212.05	4283701.57	0.35525	534.89	537.25		1.5	ANNUAL	ARLN2
689262.05	4283701.57	0.4138	537.42	537.42		1.5	ANNUAL	ARLN2
689312.05	4283701.57	0.53494	536.64	536.64		1.5	ANNUAL	ARLN2
689362.05	4283701.57	0.6854	535.6	550.78		1.5	ANNUAL	ARLN2
689412.05	4283701.57	0.83803	538.09	550.78		1.5	ANNUAL	ARLN2
689062.05	4283751.57	0.30954	524.69	524.69		1.5	ANNUAL	ARLN2
689212.05	4283751.57	0.37807	532.54	537.46		1.5	ANNUAL	ARLN2
689262.05	4283751.57	0.42595	535.39	537.34		1.5	ANNUAL	ARLN2
689312.05	4283751.57	0.55149	534.12	534.12		1.5	ANNUAL	ARLN2
689362.05	4283751.57	0.64788	536.06	550.26		1.5	ANNUAL	ARLN2
689262.05	4283801.57	0.47458	530.56	537.34		1.5	ANNUAL	ARLN2
689312.05	4283801.57	0.54274	533.57	533.57		1.5	ANNUAL	ARLN2
689362.05	4283801.57	0.6239	536.5	536.5		1.5	ANNUAL	ARLN2
689412.05	4283801.57	0.72472	539.35	539.35		1.5	ANNUAL	ARLN2
689212.05	4283851.57	0.42529	527.68	527.68		1.5	ANNUAL	ARLN2
689262.05	4283851.57	0.47913	530.07	530.07		1.5	ANNUAL	ARLN2
689312.05	4283851.57	0.52749	533.41	533.41		1.5	ANNUAL	ARLN2
689362.05	4283851.57	0.58738	536.38	536.38		1.5	ANNUAL	ARLN2
689412.05	4283851.57	0.69603	537.57	537.57		1.5	ANNUAL	ARLN2
689062.05	4283901.57	0.24942	529.18	537.59		1.5	ANNUAL	ARLN2
689112.05	4283901.57	0.31404	525.89	525.89		1.5	ANNUAL	ARLN2
689162.05	4283901.57	0.36327	526.45	526.45		1.5	ANNUAL	ARLN2
689212.05	4283901.57	0.40987	528.48	528.48		1.5	ANNUAL	ARLN2
689262.05	4283901.57	0.45608	530.89	530.89		1.5	ANNUAL	ARLN2
689312.05	4283901.57	0.49299	533.73	533.73		1.5	ANNUAL	ARLN2
689362.05	4283901.57	0.56773	534.94	534.94		1.5	ANNUAL	ARLN2
689412.05	4283901.57	0.65978	535.89	550.67		1.5	ANNUAL	ARLN2
689062.05	4283951.57	0.23383	531.16	537.67		1.5	ANNUAL	ARLN2
689112.05	4283951.57	0.29719	528.46	528.46		1.5	ANNUAL	ARLN2
689162.05	4283951.57	0.33481	529.69	529.69		1.5	ANNUAL	ARLN2
689212.05	4283951.57	0.37982	530.6	530.6		1.5	ANNUAL	ARLN2
689262.05	4283951.57	0.42498	531.75	531.75		1.5	ANNUAL	ARLN2
689312.05	4283951.57	0.4706	533.24	533.24		1.5	ANNUAL	ARLN2

689362.05	4283951.57	0.52751	535.08	550.67	1.5	ANNUAL	ARLN2
689412.05	4283951.57	0.60071	536.97	552.43	1.5	ANNUAL	ARLN2
689062.05	4284001.57	0.24077	530.3	538.14	1.5	ANNUAL	ARLN2
689112.05	4284001.57	0.28569	529.81	529.81	1.5	ANNUAL	ARLN2
689162.05	4284001.57	0.30658	532.37	532.37	1.5	ANNUAL	ARLN2
689212.05	4284001.57	0.33396	533.97	533.97	1.5	ANNUAL	ARLN2
689262.05	4284001.57	0.38162	533.78	533.78	1.5	ANNUAL	ARLN2
689312.05	4284001.57	0.43468	533.99	562.89	1.5	ANNUAL	ARLN2
689362.05	4284001.57	0.49345	535.31	562.94	1.5	ANNUAL	ARLN2
689412.05	4284001.57	0.54916	537.89	562.94	1.5	ANNUAL	ARLN2
689062.05	4284051.57	0.26126	526.88	538.14	1.5	ANNUAL	ARLN2
689112.05	4284051.57	0.27944	529.56	532.13	1.5	ANNUAL	ARLN2
689162.05	4284051.57	0.28513	533.7	533.7	1.5	ANNUAL	ARLN2
689212.05	4284051.57	0.30079	536.64	536.64	1.5	ANNUAL	ARLN2
689262.05	4284051.57	0.34219	537.12	537.12	1.5	ANNUAL	ARLN2
689312.05	4284051.57	0.39342	536.45	562.94	1.5	ANNUAL	ARLN2
689362.05	4284051.57	0.4561	536.14	562.94	1.5	ANNUAL	ARLN2
689412.05	4284051.57	0.49699	539.65	562.94	1.5	ANNUAL	ARLN2
689112.05	4284101.57	0.26384	530.03	535.62	1.5	ANNUAL	ARLN2
689162.05	4284101.57	0.27433	533.6	533.6	1.5	ANNUAL	ARLN2
689212.05	4284101.57	0.29213	536.48	536.48	1.5	ANNUAL	ARLN2
689262.05	4284101.57	0.31818	538.78	538.78	1.5	ANNUAL	ARLN2
689312.05	4284101.57	0.36768	537.21	562.94	1.5	ANNUAL	ARLN2
689362.05	4284101.57	0.42816	536.19	562.94	1.5	ANNUAL	ARLN2
689412.05	4284101.57	0.44209	542.83	562.94	1.5	ANNUAL	ARLN2
689162.05	4284151.57	0.25393	535.82	535.82	1.5	ANNUAL	ARLN2
689212.05	4284151.57	0.2875	535.45	535.45	1.5	ANNUAL	ARLN2
689262.05	4284151.57	0.30598	537.46	562.94	1.5	ANNUAL	ARLN2
689312.05	4284151.57	0.33815	539	562.94	1.5	ANNUAL	ARLN2
689362.05	4284151.57	0.39776	537.02	562.94	1.5	ANNUAL	ARLN2
689412.05	4284151.57	0.40059	544.98	562.94	1.5	ANNUAL	ARLN2
689212.05	4284201.57	0.26621	537.24	537.24	1.5	ANNUAL	ARLN2
689262.05	4284201.57	0.29509	536.75	562.94	1.5	ANNUAL	ARLN2
689312.05	4284201.57	0.32261	538.69	562.94	1.5	ANNUAL	ARLN2
689362.05	4284201.57	0.32863	546.1	562.94	1.5	ANNUAL	ARLN2
689412.05	4284201.57	0.34666	551.74	562.94	1.5	ANNUAL	ARLN2
689262.05	4284251.57	0.27099	538.99	562.89	1.5	ANNUAL	ARLN2
689312.05	4284251.57	0.2892	542.56	562.94	1.5	ANNUAL	ARLN2
689062.05	4284301.57	0.20234	532.67	532.67	1.5	ANNUAL	ARLN2
689112.05	4284301.57	0.20487	536.78	536.78	1.5	ANNUAL	ARLN2
689162.05	4284301.57	0.21671	538.53	538.53	1.5	ANNUAL	ARLN2
689062.05	4284451.57	0.18832	531.02	536.85	1.5	ANNUAL	ARLN2
689062.05	4284501.57	0.17415	533.31	535.53	1.5	ANNUAL	ARLN2
689112.05	4284501.57	0.18922	532.5	532.5	1.5	ANNUAL	ARLN2
689062.05	4284551.57	0.15716	537.07	537.07	1.5	ANNUAL	ARLN2
689112.05	4284551.57	0.17623	534.33	534.33	1.5	ANNUAL	ARLN2
689162.05	4284551.57	0.19468	533.1	533.1	1.5	ANNUAL	ARLN2
689969.65	4283460.34	1.06165	507.01	538.72	1.5	ANNUAL	ARLN2
690019.65	4283460.34	0.7102	492.39	550.78	1.5	ANNUAL	ARLN2
690069.65	4283460.34	0.51995	484.49	551.4	1.5	ANNUAL	ARLN2
690119.65	4283460.34	0.40898	486.32	563.68	1.5	ANNUAL	ARLN2
690169.65	4283460.34	0.33314	490.92	563.68	1.5	ANNUAL	ARLN2
690219.65	4283460.34	0.28344	499.06	551.4	1.5	ANNUAL	ARLN2
689969.65	4283510.34	1.06742	497.46	550.78	1.5	ANNUAL	ARLN2
690019.65	4283510.34	0.74276	488.83	550.78	1.5	ANNUAL	ARLN2

690069.65	4283510.34	0.57464	495.55	550.47	1.5	ANNUAL	ARLN2
690119.65	4283510.34	0.46435	501.98	543.27	1.5	ANNUAL	ARLN2
690169.65	4283510.34	0.37254	504.5	550.47	1.5	ANNUAL	ARLN2
690219.65	4283510.34	0.30322	504.32	550.47	1.5	ANNUAL	ARLN2
689919.65	4283560.34	1.63173	500.59	550.78	1.5	ANNUAL	ARLN2
689969.65	4283560.34	1.05751	491.02	550.78	1.5	ANNUAL	ARLN2
690019.65	4283560.34	0.84323	505.09	538.72	1.5	ANNUAL	ARLN2
690069.65	4283560.34	0.60219	514.17	538.72	1.5	ANNUAL	ARLN2
690119.65	4283560.34	0.449	518.23	538.72	1.5	ANNUAL	ARLN2
690169.65	4283560.34	0.36893	515.75	538.72	1.5	ANNUAL	ARLN2
690219.65	4283560.34	0.32239	508.35	550.47	1.5	ANNUAL	ARLN2
689919.65	4283610.34	1.58888	498.55	550.78	1.5	ANNUAL	ARLN2
689969.65	4283610.34	1.07997	496.27	550.78	1.5	ANNUAL	ARLN2
690019.65	4283610.34	0.80667	512.4	538.72	1.5	ANNUAL	ARLN2
690069.65	4283610.34	0.53247	525.28	538.72	1.5	ANNUAL	ARLN2
690119.65	4283610.34	0.39243	528.65	538.51	1.5	ANNUAL	ARLN2
690169.65	4283610.34	0.37599	519.44	538.72	1.5	ANNUAL	ARLN2
690219.65	4283610.34	0.34456	503.1	551.4	1.5	ANNUAL	ARLN2
689919.65	4283660.34	1.56671	499.92	550.78	1.5	ANNUAL	ARLN2
689969.65	4283660.34	1.11738	504.28	538.82	1.5	ANNUAL	ARLN2
690019.65	4283660.34	0.72421	521.19	538.72	1.5	ANNUAL	ARLN2
690069.65	4283660.34	0.42839	533.88	538.72	1.5	ANNUAL	ARLN2
690119.65	4283660.34	0.40342	528.27	538.72	1.5	ANNUAL	ARLN2
690169.65	4283660.34	0.40542	515.1	538.72	1.5	ANNUAL	ARLN2
690219.65	4283660.34	0.3371	493.19	577.58	1.5	ANNUAL	ARLN2
689869.65	4283710.34	1.87275	523.96	527.99	1.5	ANNUAL	ARLN2
689919.65	4283710.34	1.51338	501.37	552.14	1.5	ANNUAL	ARLN2
689969.65	4283710.34	1.10156	506.06	539.3	1.5	ANNUAL	ARLN2
690019.65	4283710.34	0.63459	527.62	538.72	1.5	ANNUAL	ARLN2
690069.65	4283710.34	0.41814	534.47	538.72	1.5	ANNUAL	ARLN2
690119.65	4283710.34	0.43913	523.3	538.72	1.5	ANNUAL	ARLN2
690169.65	4283710.34	0.42494	506.65	550.47	1.5	ANNUAL	ARLN2
690219.65	4283710.34	0.33496	489.26	602.25	1.5	ANNUAL	ARLN2
689919.65	4283760.34	1.38192	498.71	562.94	1.5	ANNUAL	ARLN2
689969.65	4283760.34	1.06953	508.33	552.12	1.5	ANNUAL	ARLN2
690019.65	4283760.34	0.64148	526.17	538.72	1.5	ANNUAL	ARLN2
690069.65	4283760.34	0.47578	528.49	538.72	1.5	ANNUAL	ARLN2
690119.65	4283760.34	0.45668	517.84	538.72	1.5	ANNUAL	ARLN2
690169.65	4283760.34	0.41089	508.22	552.14	1.5	ANNUAL	ARLN2
690219.65	4283760.34	0.35035	507.28	552.14	1.5	ANNUAL	ARLN2
689919.65	4283810.34	1.28427	500.38	562.94	1.5	ANNUAL	ARLN2
689969.65	4283810.34	1.02148	509.18	552.14	1.5	ANNUAL	ARLN2
690019.65	4283810.34	0.64238	526.12	538.72	1.5	ANNUAL	ARLN2
690069.65	4283810.34	0.44756	530.76	530.76	1.5	ANNUAL	ARLN2
690119.65	4283810.34	0.39988	525.93	531.2	1.5	ANNUAL	ARLN2
690169.65	4283810.34	0.34297	525.2	525.2	1.5	ANNUAL	ARLN2
690219.65	4283810.34	0.30202	522.63	527.67	1.5	ANNUAL	ARLN2
689919.65	4283860.34	1.16411	500.23	563.99	1.5	ANNUAL	ARLN2
689969.65	4283860.34	0.95849	511.01	552.14	1.5	ANNUAL	ARLN2
690019.65	4283860.34	0.64203	526.53	526.53	1.5	ANNUAL	ARLN2
690069.65	4283860.34	0.44997	530.48	530.48	1.5	ANNUAL	ARLN2
690119.65	4283860.34	0.37768	528.36	528.36	1.5	ANNUAL	ARLN2
690169.65	4283860.34	0.31637	528.39	528.39	1.5	ANNUAL	ARLN2
690219.65	4283860.34	0.2906	523.99	530.72	1.5	ANNUAL	ARLN2
689919.65	4283910.34	1.07444	505.05	562.94	1.5	ANNUAL	ARLN2

689969.65	4283910.34	0.88495	513.65	552.14	1.5	ANNUAL	ARLN2
690019.65	4283910.34	0.65616	523.37	552.14	1.5	ANNUAL	ARLN2
690069.65	4283910.34	0.46202	529.8	529.8	1.5	ANNUAL	ARLN2
690119.65	4283910.34	0.34945	531.52	531.52	1.5	ANNUAL	ARLN2
690169.65	4283910.34	0.29171	530.94	530.94	1.5	ANNUAL	ARLN2
690219.65	4283910.34	0.26971	527.58	527.58	1.5	ANNUAL	ARLN2
689919.65	4283960.34	0.95391	510.72	562.94	1.5	ANNUAL	ARLN2
689969.65	4283960.34	0.7747	521.03	552.14	1.5	ANNUAL	ARLN2
690019.65	4283960.34	0.58509	527.86	552.14	1.5	ANNUAL	ARLN2
690069.65	4283960.34	0.43584	531.46	550.99	1.5	ANNUAL	ARLN2
690119.65	4283960.34	0.32552	534.98	534.98	1.5	ANNUAL	ARLN2
690169.65	4283960.34	0.27279	532.81	537.82	1.5	ANNUAL	ARLN2
690219.65	4283960.34	0.27249	525.19	552.14	1.5	ANNUAL	ARLN2
689919.65	4284010.34	0.85406	512.8	562.94	1.5	ANNUAL	ARLN2
689969.65	4284010.34	0.70789	522.22	552.14	1.5	ANNUAL	ARLN2
690019.65	4284010.34	0.53958	529.6	552.14	1.5	ANNUAL	ARLN2
690069.65	4284010.34	0.39701	534.57	552.12	1.5	ANNUAL	ARLN2
690119.65	4284010.34	0.3076	537.97	537.97	1.5	ANNUAL	ARLN2
690169.65	4284010.34	0.26483	534.28	551.55	1.5	ANNUAL	ARLN2
690219.65	4284010.34	0.27161	524.43	564.77	1.5	ANNUAL	ARLN2
689919.65	4284060.34	0.75239	517.74	562.94	1.5	ANNUAL	ARLN2
689969.65	4284060.34	0.63211	524.5	552.14	1.5	ANNUAL	ARLN2
690019.65	4284060.34	0.47338	533.27	552.14	1.5	ANNUAL	ARLN2
690069.65	4284060.34	0.35521	538.63	552.14	1.5	ANNUAL	ARLN2
690119.65	4284060.34	0.28483	540.3	552.12	1.5	ANNUAL	ARLN2
690169.65	4284060.34	0.26738	534.39	552.14	1.5	ANNUAL	ARLN2
690219.65	4284060.34	0.2329	531.98	564.22	1.5	ANNUAL	ARLN2
689969.65	4284110.34	0.50176	532.66	552.14	1.5	ANNUAL	ARLN2
690019.65	4284110.34	0.38412	540.2	552.14	1.5	ANNUAL	ARLN2
690069.65	4284110.34	0.30521	545.03	552	1.5	ANNUAL	ARLN2
690119.65	4284110.34	0.26375	543.76	552.14	1.5	ANNUAL	ARLN2
690169.65	4284110.34	0.25187	537.37	552.14	1.5	ANNUAL	ARLN2
690219.65	4284110.34	0.20095	539.23	551.07	1.5	ANNUAL	ARLN2
689969.65	4284160.34	0.40678	539	552.14	1.5	ANNUAL	ARLN2
690019.65	4284160.34	0.32475	546.12	551.38	1.5	ANNUAL	ARLN2
690069.65	4284160.34	0.27716	551.03	551.03	1.5	ANNUAL	ARLN2
690119.65	4284160.34	0.24028	550.52	550.52	1.5	ANNUAL	ARLN2
690169.65	4284160.34	0.214	545.48	551.96	1.5	ANNUAL	ARLN2
690219.65	4284160.34	0.20174	539.66	564.42	1.5	ANNUAL	ARLN2
689919.65	4284210.34	0.48393	530.87	552.14	1.5	ANNUAL	ARLN2
689969.65	4284210.34	0.37112	539.95	552.08	1.5	ANNUAL	ARLN2
690019.65	4284210.34	0.30462	545.98	551.35	1.5	ANNUAL	ARLN2
690069.65	4284210.34	0.26631	550.41	550.41	1.5	ANNUAL	ARLN2
690119.65	4284210.34	0.23536	549.97	549.97	1.5	ANNUAL	ARLN2
690169.65	4284210.34	0.20779	547.83	549.53	1.5	ANNUAL	ARLN2
690219.65	4284210.34	0.18336	544.9	564.22	1.5	ANNUAL	ARLN2
689869.65	4284260.34	0.54917	520.14	562.94	1.5	ANNUAL	ARLN2
689919.65	4284260.34	0.4952	524.4	552.14	1.5	ANNUAL	ARLN2
689969.65	4284260.34	0.36511	537.15	552.14	1.5	ANNUAL	ARLN2
690019.65	4284260.34	0.30736	541.61	552.14	1.5	ANNUAL	ARLN2
690069.65	4284260.34	0.26724	544.61	551.67	1.5	ANNUAL	ARLN2
690119.65	4284260.34	0.241	546.11	546.11	1.5	ANNUAL	ARLN2
690169.65	4284260.34	0.20438	546.3	563.68	1.5	ANNUAL	ARLN2
690219.65	4284260.34	0.17363	547.85	564.32	1.5	ANNUAL	ARLN2
689919.65	4284310.34	0.46296	523.32	563.68	1.5	ANNUAL	ARLN2

689969.65	4284310.34	0.39667	529.44	562.73	1.5	ANNUAL	ARLN2
690019.65	4284310.34	0.32115	536.25	552.14	1.5	ANNUAL	ARLN2
690069.65	4284310.34	0.28551	538.25	563.68	1.5	ANNUAL	ARLN2
690119.65	4284310.34	0.24586	541.32	564.25	1.5	ANNUAL	ARLN2
690169.65	4284310.34	0.20227	545.48	564.32	1.5	ANNUAL	ARLN2
690219.65	4284310.34	0.16773	549.16	564.35	1.5	ANNUAL	ARLN2
689919.65	4284360.34	0.40603	527.45	552.14	1.5	ANNUAL	ARLN2
689969.65	4284360.34	0.37611	528.54	563.78	1.5	ANNUAL	ARLN2
690019.65	4284360.34	0.32392	532.77	564.06	1.5	ANNUAL	ARLN2
690069.65	4284360.34	0.28406	535.72	564.32	1.5	ANNUAL	ARLN2
690119.65	4284360.34	0.24252	539.82	564.35	1.5	ANNUAL	ARLN2
690169.65	4284360.34	0.19755	545.24	564.32	1.5	ANNUAL	ARLN2
690219.65	4284360.34	0.16529	548.82	564.41	1.5	ANNUAL	ARLN2
689919.65	4284410.34	0.38219	527.07	527.07	1.5	ANNUAL	ARLN2
689969.65	4284410.34	0.36429	526.11	602.25	1.5	ANNUAL	ARLN2
690019.65	4284410.34	0.29336	535.45	535.63	1.5	ANNUAL	ARLN2
690069.65	4284410.34	0.25622	537.95	563.78	1.5	ANNUAL	ARLN2
690119.65	4284410.34	0.22775	540.49	564.32	1.5	ANNUAL	ARLN2
690169.65	4284410.34	0.1908	545.4	564.32	1.5	ANNUAL	ARLN2
690219.65	4284410.34	0.1625	548.47	601.86	1.5	ANNUAL	ARLN2
689919.65	4284460.34	0.36415	524.64	602.25	1.5	ANNUAL	ARLN2
689969.65	4284460.34	0.32465	529.09	602.25	1.5	ANNUAL	ARLN2
690019.65	4284460.34	0.27511	535.26	537.89	1.5	ANNUAL	ARLN2
690069.65	4284460.34	0.2401	539.45	539.45	1.5	ANNUAL	ARLN2
690119.65	4284460.34	0.20935	542.19	602.25	1.5	ANNUAL	ARLN2
690169.65	4284460.34	0.17873	547.11	602.25	1.5	ANNUAL	ARLN2
690219.65	4284460.34	0.15209	551.32	602.25	1.5	ANNUAL	ARLN2
689243.81	4283030.64	0.33914	530.88	530.88	1.5	ANNUAL	ARLN2
689293.81	4283030.64	0.39126	529.46	529.46	1.5	ANNUAL	ARLN2
689343.81	4283030.64	0.46928	525.17	536.56	1.5	ANNUAL	ARLN2
689393.81	4283030.64	0.60239	525.12	525.12	1.5	ANNUAL	ARLN2
689443.81	4283030.64	0.84854	524.98	524.98	1.5	ANNUAL	ARLN2
689493.81	4283030.64	1.24518	524.32	524.32	1.5	ANNUAL	ARLN2
689543.81	4283030.64	1.75786	525.16	525.16	1.5	ANNUAL	ARLN2
689243.81	4283080.64	0.37954	531.25	531.25	1.5	ANNUAL	ARLN2
689293.81	4283080.64	0.47238	529.07	537.17	1.5	ANNUAL	ARLN2
689343.81	4283080.64	0.56454	527.74	537.55	1.5	ANNUAL	ARLN2
689393.81	4283080.64	0.70348	526.5	537.55	1.5	ANNUAL	ARLN2
689443.81	4283080.64	1.03123	526.2	527.36	1.5	ANNUAL	ARLN2
689493.81	4283080.64	1.67889	526.65	526.65	1.5	ANNUAL	ARLN2
689543.81	4283080.64	2.55667	526.02	526.02	1.5	ANNUAL	ARLN2
689243.81	4283130.64	0.33314	534.77	534.77	1.5	ANNUAL	ARLN2
689293.81	4283130.64	0.37234	535.63	535.63	1.5	ANNUAL	ARLN2
689343.81	4283130.64	0.51575	534.08	537.42	1.5	ANNUAL	ARLN2
689393.81	4283130.64	0.80691	531.63	531.63	1.5	ANNUAL	ARLN2
689443.81	4283130.64	1.30125	529.14	529.14	1.5	ANNUAL	ARLN2
689493.81	4283130.64	2.5716	527.9	527.9	1.5	ANNUAL	ARLN2
689543.81	4283130.64	4.27861	526.15	526.15	1.5	ANNUAL	ARLN2
689243.81	4283180.64	0.26516	536.01	536.01	1.5	ANNUAL	ARLN2
689293.81	4283180.64	0.32422	537.11	537.11	1.5	ANNUAL	ARLN2
689343.81	4283180.64	0.44502	537.22	537.22	1.5	ANNUAL	ARLN2
689393.81	4283180.64	0.82176	534.34	534.34	1.5	ANNUAL	ARLN2
689443.81	4283180.64	1.74296	531.36	531.36	1.5	ANNUAL	ARLN2
689493.81	4283180.64	5.16993	529.32	529.32	1.5	ANNUAL	ARLN2
689543.81	4283180.64	8.46208	527.27	527.27	1.5	ANNUAL	ARLN2

689243.81	4283230.64	0.25449	535.82	535.82	1.5	ANNUAL	ARLN2
689293.81	4283230.64	0.28997	537.32	537.32	1.5	ANNUAL	ARLN2
689343.81	4283230.64	0.3911	537.15	537.15	1.5	ANNUAL	ARLN2
689393.81	4283230.64	0.716	534.6	534.6	1.5	ANNUAL	ARLN2
689443.81	4283230.64	1.82553	531.93	531.93	1.5	ANNUAL	ARLN2
689243.81	4283280.64	0.26878	535.51	535.51	1.5	ANNUAL	ARLN2
689293.81	4283280.64	0.30331	536.93	536.93	1.5	ANNUAL	ARLN2
689343.81	4283280.64	0.43291	536.13	536.13	1.5	ANNUAL	ARLN2
689393.81	4283280.64	0.8531	533.93	533.93	1.5	ANNUAL	ARLN2
689443.81	4283280.64	2.71837	531.24	531.24	1.5	ANNUAL	ARLN2
689243.81	4283330.64	0.29793	534.37	534.37	1.5	ANNUAL	ARLN2
689293.81	4283330.64	0.38899	534.76	534.76	1.5	ANNUAL	ARLN2
689343.81	4283330.64	0.63324	533.41	533.41	1.5	ANNUAL	ARLN2
689393.81	4283330.64	1.20662	531.98	531.98	1.5	ANNUAL	ARLN2
689443.81	4283330.64	2.94359	531.69	531.69	1.5	ANNUAL	ARLN2
689493.81	4283330.64	7.84795	529.94	529.94	1.5	ANNUAL	ARLN2
689243.81	4283380.64	0.33372	533.68	533.68	1.5	ANNUAL	ARLN2
689293.81	4283380.64	0.43471	534.32	534.32	1.5	ANNUAL	ARLN2
689343.81	4283380.64	0.6331	535	535	1.5	ANNUAL	ARLN2
689393.81	4283380.64	1.12158	534.7	535.45	1.5	ANNUAL	ARLN2
689443.81	4283380.64	2.24201	534.75	535.85	1.5	ANNUAL	ARLN2
689243.81	4283430.64	0.38186	533.36	533.36	1.5	ANNUAL	ARLN2
689293.81	4283430.64	0.4896	534.26	534.26	1.5	ANNUAL	ARLN2
689343.81	4283430.64	0.67848	535.27	535.27	1.5	ANNUAL	ARLN2
689393.81	4283430.64	1.07007	536.17	536.17	1.5	ANNUAL	ARLN2
689443.81	4283430.64	1.80947	537.27	537.27	1.5	ANNUAL	ARLN2
689243.81	4283480.64	0.40876	533.09	533.09	1.5	ANNUAL	ARLN2
689293.81	4283480.64	0.51283	534.21	534.21	1.5	ANNUAL	ARLN2
689343.81	4283480.64	0.71555	534.93	534.93	1.5	ANNUAL	ARLN2
689393.81	4283480.64	1.0348	536.06	550.7	1.5	ANNUAL	ARLN2
689443.81	4283480.64	1.55861	537.64	550.76	1.5	ANNUAL	ARLN2
689493.81	4283480.64	2.22364	539.69	550.7	1.5	ANNUAL	ARLN2
689584.29	4283182	7.81803	525.58	525.58	1.5	ANNUAL	ARLN2
689626.46	4283180.77	7.12234	519.89	527.35	1.5	ANNUAL	ARLN2
689581.46	4283081.75	3.09108	522.81	525.66	1.5	ANNUAL	ARLN2
689586.89	4283032.14	2.17659	520.25	525.64	1.5	ANNUAL	ARLN2
689628.89	4283033.23	2.54808	514.93	526.85	1.5	ANNUAL	ARLN2
690123.39	4283039.13	0.83898	502.42	515.39	1.5	ANNUAL	ARLN2
690123.39	4283089.13	0.81654	504.85	515.62	1.5	ANNUAL	ARLN2
690173.39	4283089.13	0.61771	513.46	513.61	1.5	ANNUAL	ARLN2
689923.39	4283139.13	1.97323	519.16	519.16	1.5	ANNUAL	ARLN2
689950.32	4283366.56	1.15666	521.49	529.62	1.5	ANNUAL	ARLN2
690000.32	4283366.56	0.73343	525.34	525.34	1.5	ANNUAL	ARLN2
689946.72	4283397.81	1.10528	522.25	529.64	1.5	ANNUAL	ARLN2
689990.74	4283391.96	0.76175	524.47	526.53	1.5	ANNUAL	ARLN2
690047.5	4284607.9	0.21594	537.17	603.34	1.5	ANNUAL	ARLN2
690097.5	4284607.9	0.20305	537.61	603.34	1.5	ANNUAL	ARLN2
690147.5	4284607.9	0.18392	539.87	603.34	1.5	ANNUAL	ARLN2
690197.5	4284607.9	0.15947	544.63	603.34	1.5	ANNUAL	ARLN2
690047.5	4284657.9	0.21548	534.61	603.34	1.5	ANNUAL	ARLN2
690097.5	4284657.9	0.20069	535.78	603.34	1.5	ANNUAL	ARLN2
690147.5	4284657.9	0.18069	538.41	603.34	1.5	ANNUAL	ARLN2
690197.5	4284657.9	0.15391	544.27	603.34	1.5	ANNUAL	ARLN2
689997.5	4284707.9	0.21851	533.29	603.34	1.5	ANNUAL	ARLN2
690097.5	4284707.9	0.19317	535.32	603.34	1.5	ANNUAL	ARLN2

690147.5	4284707.9	0.17477	537.81	603.34	1.5	ANNUAL	ARLN2
690197.5	4284707.9	0.15044	543.18	603.34	1.5	ANNUAL	ARLN2
690047.5	4284757.9	0.1922	535.23	603.34	1.5	ANNUAL	ARLN2
690097.5	4284757.9	0.18051	536.4	603.34	1.5	ANNUAL	ARLN2
690147.5	4284757.9	0.17003	536.99	603.34	1.5	ANNUAL	ARLN2
690197.5	4284757.9	0.14931	541.31	603.34	1.5	ANNUAL	ARLN2
689947.5	4284807.9	0.19665	536.71	536.71	1.5	ANNUAL	ARLN2
690047.5	4284807.9	0.18065	535.92	603.34	1.5	ANNUAL	ARLN2
690097.5	4284807.9	0.16838	537.61	603.34	1.5	ANNUAL	ARLN2
690147.5	4284807.9	0.16065	537.73	603.34	1.5	ANNUAL	ARLN2
690197.5	4284807.9	0.14681	539.99	603.34	1.5	ANNUAL	ARLN2
689897.5	4284857.9	0.19622	536.76	536.76	1.5	ANNUAL	ARLN2
689947.5	4284857.9	0.18558	537.24	537.24	1.5	ANNUAL	ARLN2
689997.5	4284857.9	0.17845	536.94	536.94	1.5	ANNUAL	ARLN2
690047.5	4284857.9	0.17003	536.64	603.34	1.5	ANNUAL	ARLN2
690097.5	4284857.9	0.15873	538.34	603.34	1.5	ANNUAL	ARLN2
690147.5	4284857.9	0.14726	540.07	603.34	1.5	ANNUAL	ARLN2
690197.5	4284857.9	0.13668	541.59	603.34	1.5	ANNUAL	ARLN2
690247.5	4284857.9	0.12392	544.85	603.34	1.5	ANNUAL	ARLN2
689847.5	4284907.9	0.18916	538.64	538.64	1.5	ANNUAL	ARLN2
689897.5	4284907.9	0.18381	537.77	537.77	1.5	ANNUAL	ARLN2
689947.5	4284907.9	0.17746	537.08	537.08	1.5	ANNUAL	ARLN2
689997.5	4284907.9	0.16988	537.13	537.13	1.5	ANNUAL	ARLN2
690047.5	4284907.9	0.15919	537.74	603.34	1.5	ANNUAL	ARLN2
690097.5	4284907.9	0.15135	538.55	603.34	1.5	ANNUAL	ARLN2
690147.5	4284907.9	0.13911	540.93	603.34	1.5	ANNUAL	ARLN2
690197.5	4284907.9	0.12919	542.51	603.34	1.5	ANNUAL	ARLN2
690247.5	4284907.9	0.11986	544.49	603.34	1.5	ANNUAL	ARLN2
689797.5	4284957.9	0.18288	539.55	539.55	1.5	ANNUAL	ARLN2
689847.5	4284957.9	0.17583	540.19	540.19	1.5	ANNUAL	ARLN2
689897.5	4284957.9	0.1711	539.27	539.27	1.5	ANNUAL	ARLN2
689947.5	4284957.9	0.16718	537.89	537.89	1.5	ANNUAL	ARLN2
689997.5	4284957.9	0.16247	537.13	537.13	1.5	ANNUAL	ARLN2
690047.5	4284957.9	0.1525	537.72	603.34	1.5	ANNUAL	ARLN2
690097.5	4284957.9	0.14288	539.34	603.34	1.5	ANNUAL	ARLN2
690147.5	4284957.9	0.13384	540.89	603.34	1.5	ANNUAL	ARLN2
690197.5	4284957.9	0.12495	542.29	603.34	1.5	ANNUAL	ARLN2
690247.5	4284957.9	0.11583	544.24	603.34	1.5	ANNUAL	ARLN2
689897.5	4285007.9	0.16197	539.86	539.86	1.5	ANNUAL	ARLN2
689947.5	4285007.9	0.16159	537.26	537.26	1.5	ANNUAL	ARLN2
689997.5	4285007.9	0.15552	537.14	537.14	1.5	ANNUAL	ARLN2
690047.5	4285007.9	0.14781	537.14	603.34	1.5	ANNUAL	ARLN2
690097.5	4285007.9	0.14077	537.99	603.34	1.5	ANNUAL	ARLN2
690147.5	4285007.9	0.13117	539.94	603.34	1.5	ANNUAL	ARLN2
690197.5	4285007.9	0.12128	541.95	603.34	1.5	ANNUAL	ARLN2
690247.5	4285007.9	0.11157	544.25	603.34	1.5	ANNUAL	ARLN2
689897.5	4285057.9	0.1479	541.78	547.75	1.5	ANNUAL	ARLN2
689947.5	4285057.9	0.14656	539.62	562.37	1.5	ANNUAL	ARLN2
689997.5	4285057.9	0.14582	537.63	562.37	1.5	ANNUAL	ARLN2
690047.5	4285057.9	0.14187	537.14	589.12	1.5	ANNUAL	ARLN2
690097.5	4285057.9	0.13728	537.19	603.34	1.5	ANNUAL	ARLN2
690147.5	4285057.9	0.12824	539.16	603.34	1.5	ANNUAL	ARLN2
690197.5	4285057.9	0.11792	541.58	603.34	1.5	ANNUAL	ARLN2
690247.5	4285057.9	0.10806	544.06	603.34	1.5	ANNUAL	ARLN2
689970.15	4284514.09	0.27091	535.22	537.9	1.5	ANNUAL	ARLN2

690020.15	4284514.09	0.24527	538.37	538.37	1.5	ANNUAL	ARLN2
690070.15	4284514.09	0.21944	540.11	602.25	1.5	ANNUAL	ARLN2
690120.15	4284514.09	0.19599	542.8	603.34	1.5	ANNUAL	ARLN2
690170.15	4284514.09	0.17117	547.04	603.34	1.5	ANNUAL	ARLN2
690220.15	4284514.09	0.14958	550.47	603.34	1.5	ANNUAL	ARLN2
690020.15	4284564.09	0.23051	538.57	538.57	1.5	ANNUAL	ARLN2
690070.15	4284564.09	0.20821	540.15	603.34	1.5	ANNUAL	ARLN2
690120.15	4284564.09	0.19391	540.79	603.34	1.5	ANNUAL	ARLN2
690170.15	4284564.09	0.17176	544.31	603.34	1.5	ANNUAL	ARLN2
690220.15	4284564.09	0.1526	547.27	603.34	1.5	ANNUAL	ARLN2
689216.55	4284758.96	0.17116	535.39	535.39	1.5	ANNUAL	ARLN2
689266.55	4284758.96	0.1782	537.06	537.06	1.5	ANNUAL	ARLN2
689316.55	4284758.96	0.18964	536.91	536.91	1.5	ANNUAL	ARLN2
689366.55	4284758.96	0.20383	535.98	535.98	1.5	ANNUAL	ARLN2
689416.55	4284758.96	0.21678	536.01	536.01	1.5	ANNUAL	ARLN2
689466.55	4284758.96	0.22704	536.56	536.56	1.5	ANNUAL	ARLN2
689516.55	4284758.96	0.23346	537.28	537.28	1.5	ANNUAL	ARLN2
689216.55	4284808.96	0.16304	535.86	535.86	1.5	ANNUAL	ARLN2
689266.55	4284808.96	0.17021	537.23	537.23	1.5	ANNUAL	ARLN2
689316.55	4284808.96	0.1805	537.23	537.23	1.5	ANNUAL	ARLN2
689366.55	4284808.96	0.19332	536.51	536.51	1.5	ANNUAL	ARLN2
689416.55	4284808.96	0.20598	536.17	536.17	1.5	ANNUAL	ARLN2
689566.55	4284808.96	0.2226	538.51	538.51	1.5	ANNUAL	ARLN2
689216.55	4284858.96	0.15532	536.46	536.46	1.5	ANNUAL	ARLN2
689266.55	4284858.96	0.1647	536.42	536.42	1.5	ANNUAL	ARLN2
689316.55	4284858.96	0.17298	537.1	537.1	1.5	ANNUAL	ARLN2
689366.55	4284858.96	0.18315	537.27	537.27	1.5	ANNUAL	ARLN2
689466.55	4284858.96	0.20246	537.37	537.37	1.5	ANNUAL	ARLN2
689516.55	4284858.96	0.20537	538.75	538.75	1.5	ANNUAL	ARLN2
689566.55	4284858.96	0.20744	539.75	539.75	1.5	ANNUAL	ARLN2
689666.55	4284858.96	0.21619	538.58	538.58	1.5	ANNUAL	ARLN2
689266.55	4284908.96	0.15809	536.38	536.38	1.5	ANNUAL	ARLN2
689316.55	4284908.96	0.16625	536.86	536.86	1.5	ANNUAL	ARLN2
689366.55	4284908.96	0.17489	537.48	537.48	1.5	ANNUAL	ARLN2
689416.55	4284908.96	0.18413	537.67	537.67	1.5	ANNUAL	ARLN2
689466.55	4284908.96	0.19186	537.65	537.65	1.5	ANNUAL	ARLN2
689616.55	4284908.96	0.19874	540.33	540.33	1.5	ANNUAL	ARLN2
689216.55	4284958.96	0.14135	537.22	549.49	1.5	ANNUAL	ARLN2
689366.55	4284958.96	0.1681	537.23	537.23	1.5	ANNUAL	ARLN2
689416.55	4284958.96	0.17669	537.26	537.26	1.5	ANNUAL	ARLN2
689466.55	4284958.96	0.17793	539.97	539.97	1.5	ANNUAL	ARLN2
689516.55	4284958.96	0.18104	540.7	540.7	1.5	ANNUAL	ARLN2
689566.55	4284958.96	0.18398	540.97	540.97	1.5	ANNUAL	ARLN2
689616.55	4284958.96	0.18666	541.19	541.19	1.5	ANNUAL	ARLN2
689216.55	4285008.96	0.13388	539.29	539.29	1.5	ANNUAL	ARLN2
689366.55	4285008.96	0.15878	538.57	538.57	1.5	ANNUAL	ARLN2
689416.55	4285008.96	0.16559	538.22	548.48	1.5	ANNUAL	ARLN2
689566.55	4285008.96	0.17128	542.84	542.84	1.5	ANNUAL	ARLN2
689712.61	4284806.28	0.2313	537.24	537.24	1.5	ANNUAL	ARLN2
689665.5	4284822.91	0.22802	537.58	537.58	1.5	ANNUAL	ARLN2
689153.77	4285125.11	0.10584	546.88	546.88	1.5	ANNUAL	ARLN2
689203.77	4285125.11	0.11154	547.16	547.16	1.5	ANNUAL	ARLN2
689303.77	4285125.11	0.12485	546.19	546.19	1.5	ANNUAL	ARLN2
689353.77	4285125.11	0.13182	545.84	545.84	1.5	ANNUAL	ARLN2
689603.77	4285125.11	0.14917	546.36	546.36	1.5	ANNUAL	ARLN2

689653.77	4285125.11	0.14929	546.88	546.88	1.5	ANNUAL	ARLN2
689703.77	4285125.11	0.14579	548.13	548.13	1.5	ANNUAL	ARLN2
689803.77	4285125.11	0.14103	546.79	546.79	1.5	ANNUAL	ARLN2
689853.77	4285125.11	0.13578	547.33	547.33	1.5	ANNUAL	ARLN2
689903.77	4285125.11	0.12846	548.27	548.27	1.5	ANNUAL	ARLN2
689953.77	4285125.11	0.12272	546.64	562.17	1.5	ANNUAL	ARLN2
690003.77	4285125.11	0.12319	543.82	562.55	1.5	ANNUAL	ARLN2
690103.77	4285125.11	0.12422	539.54	589.12	1.5	ANNUAL	ARLN2
689153.77	4285175.11	0.10193	547.57	547.57	1.5	ANNUAL	ARLN2
689203.77	4285175.11	0.10554	549.41	549.41	1.5	ANNUAL	ARLN2
689303.77	4285175.11	0.1189	547.49	547.49	1.5	ANNUAL	ARLN2
689353.77	4285175.11	0.12622	546.38	546.38	1.5	ANNUAL	ARLN2
689603.77	4285175.11	0.14081	547.53	547.53	1.5	ANNUAL	ARLN2
689653.77	4285175.11	0.14049	548.26	548.26	1.5	ANNUAL	ARLN2
689703.77	4285175.11	0.13717	549.55	549.55	1.5	ANNUAL	ARLN2
689753.77	4285175.11	0.13192	549.68	561.21	1.5	ANNUAL	ARLN2
689803.77	4285175.11	0.13102	547.91	561.96	1.5	ANNUAL	ARLN2
689853.77	4285175.11	0.12502	549	562.37	1.5	ANNUAL	ARLN2
689903.77	4285175.11	0.11582	551.59	562.17	1.5	ANNUAL	ARLN2
689953.77	4285175.11	0.11123	550.86	562.37	1.5	ANNUAL	ARLN2
690003.77	4285175.11	0.11185	547.4	563.2	1.5	ANNUAL	ARLN2
689153.77	4285225.11	0.09825	548.23	548.23	1.5	ANNUAL	ARLN2
689203.77	4285225.11	0.10179	549.82	549.82	1.5	ANNUAL	ARLN2
689253.77	4285225.11	0.10696	549.75	549.75	1.5	ANNUAL	ARLN2
689303.77	4285225.11	0.11364	548.54	548.54	1.5	ANNUAL	ARLN2
689353.77	4285225.11	0.12102	546.86	546.86	1.5	ANNUAL	ARLN2
689403.77	4285225.11	0.12503	547.47	547.47	1.5	ANNUAL	ARLN2
689453.77	4285225.11	0.12856	547.58	547.58	1.5	ANNUAL	ARLN2
689503.77	4285225.11	0.13208	546.85	546.85	1.5	ANNUAL	ARLN2
689553.77	4285225.11	0.1324	548.05	548.05	1.5	ANNUAL	ARLN2
689603.77	4285225.11	0.13239	549.25	549.25	1.5	ANNUAL	ARLN2
689653.77	4285225.11	0.12956	550.38	562.2	1.5	ANNUAL	ARLN2
689703.77	4285225.11	0.12596	552.04	562.2	1.5	ANNUAL	ARLN2
689753.77	4285225.11	0.12252	552.5	562.19	1.5	ANNUAL	ARLN2
689803.77	4285225.11	0.12198	550.34	562.19	1.5	ANNUAL	ARLN2
689853.77	4285225.11	0.11614	551.71	562.37	1.5	ANNUAL	ARLN2
689903.77	4285225.11	0.10585	556.17	562.28	1.5	ANNUAL	ARLN2
689953.77	4285225.11	0.10248	554.54	562.37	1.5	ANNUAL	ARLN2
690003.77	4285225.11	0.10375	550	563.77	1.5	ANNUAL	ARLN2
690053.77	4285225.11	0.09584	553.16	562.98	1.5	ANNUAL	ARLN2
689153.77	4285275.11	0.09423	549.46	549.46	1.5	ANNUAL	ARLN2
689203.77	4285275.11	0.09796	550.54	550.54	1.5	ANNUAL	ARLN2
689253.77	4285275.11	0.10382	549.45	549.45	1.5	ANNUAL	ARLN2
689303.77	4285275.11	0.10927	549.07	549.07	1.5	ANNUAL	ARLN2
689353.77	4285275.11	0.11498	548.34	548.34	1.5	ANNUAL	ARLN2
689403.77	4285275.11	0.11983	547.84	547.84	1.5	ANNUAL	ARLN2
689453.77	4285275.11	0.12318	547.81	547.81	1.5	ANNUAL	ARLN2
689503.77	4285275.11	0.12531	547.96	547.96	1.5	ANNUAL	ARLN2
689553.77	4285275.11	0.12536	549.32	549.32	1.5	ANNUAL	ARLN2
689603.77	4285275.11	0.12367	551.84	551.84	1.5	ANNUAL	ARLN2
689653.77	4285275.11	0.11925	554.37	561.65	1.5	ANNUAL	ARLN2
689703.77	4285275.11	0.11434	558.02	561.95	1.5	ANNUAL	ARLN2
689753.77	4285275.11	0.11126	558.83	561.96	1.5	ANNUAL	ARLN2
689803.77	4285275.11	0.11081	556.02	559.45	1.5	ANNUAL	ARLN2
689853.77	4285275.11	0.10632	558.28	558.28	1.5	ANNUAL	ARLN2

689903.77	4285275.11	0.09879	561.62	561.62	1.5	ANNUAL	ARLN2
689953.77	4285275.11	0.09438	561.18	561.18	1.5	ANNUAL	ARLN2
690003.77	4285275.11	0.09244	558.72	558.72	1.5	ANNUAL	ARLN2
690053.77	4285275.11	0.0868	561.16	561.16	1.5	ANNUAL	ARLN2
689153.77	4285325.11	0.0903	550.87	550.87	1.5	ANNUAL	ARLN2
689203.77	4285325.11	0.09398	551.71	551.71	1.5	ANNUAL	ARLN2
689253.77	4285325.11	0.09964	550.44	550.44	1.5	ANNUAL	ARLN2
689303.77	4285325.11	0.10469	550.06	550.06	1.5	ANNUAL	ARLN2
689353.77	4285325.11	0.10948	549.72	549.72	1.5	ANNUAL	ARLN2
689403.77	4285325.11	0.11388	549.19	549.19	1.5	ANNUAL	ARLN2
689453.77	4285325.11	0.11681	549.25	549.25	1.5	ANNUAL	ARLN2
689503.77	4285325.11	0.11913	549.02	549.02	1.5	ANNUAL	ARLN2
689553.77	4285325.11	0.11872	550.74	550.74	1.5	ANNUAL	ARLN2
689603.77	4285325.11	0.11622	554.08	554.08	1.5	ANNUAL	ARLN2
689653.77	4285325.11	0.11254	557.81	557.81	1.5	ANNUAL	ARLN2
689703.77	4285325.11	0.10773	561.6	561.6	1.5	ANNUAL	ARLN2
689753.77	4285325.11	0.10569	561.32	561.32	1.5	ANNUAL	ARLN2
689803.77	4285325.11	0.10668	557.19	557.19	1.5	ANNUAL	ARLN2
689853.77	4285325.11	0.10136	558.79	559.98	1.5	ANNUAL	ARLN2
689903.77	4285325.11	0.09563	561.23	561.23	1.5	ANNUAL	ARLN2
689953.77	4285325.11	0.09031	562.11	562.11	1.5	ANNUAL	ARLN2
690003.77	4285325.11	0.08601	562.47	562.47	1.5	ANNUAL	ARLN2
690053.77	4285325.11	0.08251	562.76	562.76	1.5	ANNUAL	ARLN2
690103.77	4285325.11	0.08197	557.6	562.73	1.5	ANNUAL	ARLN2
689653.19	4285078.65	0.15883	545.28	545.28	1.5	ANNUAL	ARLN2
689596.53	4285079.83	0.15811	544.73	544.73	1.5	ANNUAL	ARLN2
689417.31	4285054.43	0.1513	542.59	549.22	1.5	ANNUAL	ARLN2
689465.48	4285057.44	0.15375	543.96	548.14	1.5	ANNUAL	ARLN2
689160.76	4284611.23	0.1844	533.56	533.56	1.5	ANNUAL	ARLN2
689595.79	4284809.16	0.22555	538.38	538.38	1.5	ANNUAL	ARLN2
689614.28	4284828.01	0.22185	538.53	538.53	1.5	ANNUAL	ARLN2
689880.93	4283885.33	1.25138	512.72	562.51	1.5	ANNUAL	ARLN2
689878.21	4284393.24	0.41019	526.73	537.47	1.5	ANNUAL	ARLN2
689919.3	4284393.48	0.38304	528.52	528.52	1.5	ANNUAL	ARLN2
690067.31	4284711.79	0.20067	534.58	603.34	1.5	ANNUAL	ARLN2
689854.2	4285030.1	0.1596	541.82	541.82	1.5	ANNUAL	ARLN2
689832.17	4285004.36	0.16759	541.12	541.12	1.5	ANNUAL	ARLN2
689709.9	4284847.93	0.2179	538.26	538.26	1.5	ANNUAL	ARLN2
689566.83	4284730.6	0.2479	537.2	537.2	1.5	ANNUAL	ARLN2
689380.2	4284259.82	0.31326	547.59	562.94	1.5	ANNUAL	ARLN2
689367.58	4284231.36	0.31676	547.29	562.94	1.5	ANNUAL	ARLN2
689441.09	4283793	0.8153	540.33	540.33	1.5	ANNUAL	ARLN2
689436.64	4283733.85	0.8225	543.4	550.19	1.5	ANNUAL	ARLN2
689439.11	4283767.76	0.8084	541.84	547.9	1.5	ANNUAL	ARLN2
689436.64	4283689.05	0.89142	542.64	550.73	1.5	ANNUAL	ARLN2
689444.06	4283650.43	0.96625	543.87	550.78	1.5	ANNUAL	ARLN2
689500.74	4283585.58	1.38232	550.23	550.23	1.5	ANNUAL	ARLN2
689505.94	4283507.86	2.12207	540.29	550.76	1.5	ANNUAL	ARLN2
689546.04	4283356.63	10.9784	526.73	550.7	1.5	ANNUAL	ARLN2
689912.61	4283166.04	2.07501	520.34	526.34	1.5	ANNUAL	ARLN2

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NUM YRS	NET ID
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MODELING IONS USED: gDFAULT C ELEV FLGP OL RURA L
PLOT FILE OF ANI VALUES AVI GED ACROS 5 YEARS FOR SO URCE GRO UP: PAREA1
FOR A TOTAL OF 7 RECEPTORS.
FORM AT: (3(1X,F1),3(1X,F8.2), 2X,A6,2X,A8 2X,I8.8, 2X,A8)

X	Y	AVERAGE C	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
689212.05	4283551.6	0.26073	529.56	529.56	1.5	ANNUAL	PAREA1		5
689262.05	4283551.6	0.30767	533	533	1.5	ANNUAL	PAREA1		5
689312.05	4283551.6	0.36818	534.01	534.01	1.5	ANNUAL	PAREA1		5
689362.05	4283551.6	0.45175	534.99	550.78	1.5	ANNUAL	PAREA1		5
689412.05	4283551.6	0.57582	536.9	550.78	1.5	ANNUAL	PAREA1		5
689212.05	4283601.6	0.27321	531	534.74	1.5	ANNUAL	PAREA1		5
689262.05	4283601.6	0.32394	534.44	534.44	1.5	ANNUAL	PAREA1		5
689312.05	4283601.6	0.38799	534.18	534.18	1.5	ANNUAL	PAREA1		5
689362.05	4283601.6	0.48058	535.56	550.78	1.5	ANNUAL	PAREA1		5
689412.05	4283601.6	0.62184	537.51	550.78	1.5	ANNUAL	PAREA1		5
689262.05	4283651.6	0.34175	536.79	536.79	1.5	ANNUAL	PAREA1		5
689312.05	4283651.6	0.4098	535.84	535.84	1.5	ANNUAL	PAREA1		5
689362.05	4283651.6	0.50757	535.52	550.78	1.5	ANNUAL	PAREA1		5
689412.05	4283651.6	0.67039	538.25	550.78	1.5	ANNUAL	PAREA1		5
689212.05	4283701.6	0.29994	534.89	537.25	1.5	ANNUAL	PAREA1		5
689262.05	4283701.6	0.3587	537.42	537.42	1.5	ANNUAL	PAREA1		5
689312.05	4283701.6	0.43254	536.64	536.64	1.5	ANNUAL	PAREA1		5
689362.05	4283701.6	0.53907	535.6	550.78	1.5	ANNUAL	PAREA1		5
689412.05	4283701.6	0.73172	538.09	550.78	1.5	ANNUAL	PAREA1		5
689062.05	4283751.6	0.20522	524.69	524.69	1.5	ANNUAL	PAREA1		5
689212.05	4283751.6	0.31084	532.54	537.46	1.5	ANNUAL	PAREA1		5
689262.05	4283751.6	0.37227	535.39	537.34	1.5	ANNUAL	PAREA1		5
689312.05	4283751.6	0.45128	534.12	534.12	1.5	ANNUAL	PAREA1		5
689362.05	4283751.6	0.57755	536.06	550.26	1.5	ANNUAL	PAREA1		5
689262.05	4283801.6	0.38434	530.56	537.34	1.5	ANNUAL	PAREA1		5
689312.05	4283801.6	0.47544	533.57	533.57	1.5	ANNUAL	PAREA1		5
689362.05	4283801.6	0.61916	536.5	536.5	1.5	ANNUAL	PAREA1		5
689412.05	4283801.6	0.89177	539.35	539.35	1.5	ANNUAL	PAREA1		5
689212.05	4283851.6	0.33531	527.68	527.68	1.5	ANNUAL	PAREA1		5
689262.05	4283851.6	0.40217	530.07	530.07	1.5	ANNUAL	PAREA1		5
689312.05	4283851.6	0.50092	533.41	533.41	1.5	ANNUAL	PAREA1		5
689362.05	4283851.6	0.65867	536.38	536.38	1.5	ANNUAL	PAREA1		5
689412.05	4283851.6	0.94631	537.57	537.57	1.5	ANNUAL	PAREA1		5
689062.05	4283901.6	0.2315	529.18	537.59	1.5	ANNUAL	PAREA1		5
689112.05	4283901.6	0.2602	525.89	525.89	1.5	ANNUAL	PAREA1		5
689162.05	4283901.6	0.29872	526.45	526.45	1.5	ANNUAL	PAREA1		5
689212.05	4283901.6	0.35033	528.48	528.48	1.5	ANNUAL	PAREA1		5
689262.05	4283901.6	0.42154	530.89	530.89	1.5	ANNUAL	PAREA1		5
689312.05	4283901.6	0.52685	533.73	533.73	1.5	ANNUAL	PAREA1		5
689362.05	4283901.6	0.69113	534.94	534.94	1.5	ANNUAL	PAREA1		5
689412.05	4283901.6	0.99552	535.89	550.67	1.5	ANNUAL	PAREA1		5
689062.05	4283951.6	0.24068	531.16	537.67	1.5	ANNUAL	PAREA1		5
689112.05	4283951.6	0.27113	528.46	528.46	1.5	ANNUAL	PAREA1		5
689162.05	4283951.6	0.31248	529.69	529.69	1.5	ANNUAL	PAREA1		5
689212.05	4283951.6	0.36659	530.6	530.6	1.5	ANNUAL	PAREA1		5
689262.05	4283951.6	0.44081	531.75	531.75	1.5	ANNUAL	PAREA1		5
689312.05	4283951.6	0.55019	533.24	533.24	1.5	ANNUAL	PAREA1		5

689362.05	4283951.6	0.72689	535.08	550.67	1.5	ANNUAL	PAREA1	5
689412.05	4283951.6	1.05816	536.97	552.43	1.5	ANNUAL	PAREA1	5
689062.05	4284001.6	0.24802	530.3	538.14	1.5	ANNUAL	PAREA1	5
689112.05	4284001.6	0.28166	529.81	529.81	1.5	ANNUAL	PAREA1	5
689162.05	4284001.6	0.32628	532.37	532.37	1.5	ANNUAL	PAREA1	5
689212.05	4284001.6	0.38437	533.97	533.97	1.5	ANNUAL	PAREA1	5
689262.05	4284001.6	0.46155	533.78	533.78	1.5	ANNUAL	PAREA1	5
689312.05	4284001.6	0.57534	533.99	562.89	1.5	ANNUAL	PAREA1	5
689362.05	4284001.6	0.76116	535.31	562.94	1.5	ANNUAL	PAREA1	5
689412.05	4284001.6	1.11891	537.89	562.94	1.5	ANNUAL	PAREA1	5
689062.05	4284051.6	0.25333	526.88	538.14	1.5	ANNUAL	PAREA1	5
689112.05	4284051.6	0.29029	529.56	532.13	1.5	ANNUAL	PAREA1	5
689162.05	4284051.6	0.33846	533.7	533.7	1.5	ANNUAL	PAREA1	5
689212.05	4284051.6	0.40216	536.64	536.64	1.5	ANNUAL	PAREA1	5
689262.05	4284051.6	0.48554	537.12	537.12	1.5	ANNUAL	PAREA1	5
689312.05	4284051.6	0.6047	536.45	562.94	1.5	ANNUAL	PAREA1	5
689362.05	4284051.6	0.79722	536.14	562.94	1.5	ANNUAL	PAREA1	5
689412.05	4284051.6	1.19369	539.65	562.94	1.5	ANNUAL	PAREA1	5
689112.05	4284101.6	0.29752	530.03	535.62	1.5	ANNUAL	PAREA1	5
689162.05	4284101.6	0.34765	533.6	533.6	1.5	ANNUAL	PAREA1	5
689212.05	4284101.6	0.41388	536.48	536.48	1.5	ANNUAL	PAREA1	5
689262.05	4284101.6	0.50649	538.78	538.78	1.5	ANNUAL	PAREA1	5
689312.05	4284101.6	0.62829	537.21	562.94	1.5	ANNUAL	PAREA1	5
689362.05	4284101.6	0.8289	536.19	562.94	1.5	ANNUAL	PAREA1	5
689412.05	4284101.6	1.31208	542.83	562.94	1.5	ANNUAL	PAREA1	5
689162.05	4284151.6	0.35776	535.82	535.82	1.5	ANNUAL	PAREA1	5
689212.05	4284151.6	0.42194	535.45	535.45	1.5	ANNUAL	PAREA1	5
689262.05	4284151.6	0.51585	537.46	562.94	1.5	ANNUAL	PAREA1	5
689312.05	4284151.6	0.65569	539	562.94	1.5	ANNUAL	PAREA1	5
689362.05	4284151.6	0.86627	537.02	562.94	1.5	ANNUAL	PAREA1	5
689412.05	4284151.6	1.47648	544.98	562.94	1.5	ANNUAL	PAREA1	5
689212.05	4284201.6	0.4325	537.24	537.24	1.5	ANNUAL	PAREA1	5
689262.05	4284201.6	0.52489	536.75	562.94	1.5	ANNUAL	PAREA1	5
689312.05	4284201.6	0.67212	538.69	562.94	1.5	ANNUAL	PAREA1	5
689362.05	4284201.6	1.04161	546.1	562.94	1.5	ANNUAL	PAREA1	5
689412.05	4284201.6	1.75191	551.74	562.94	1.5	ANNUAL	PAREA1	5
689262.05	4284251.6	0.53802	538.99	562.89	1.5	ANNUAL	PAREA1	5
689312.05	4284251.6	0.7156	542.56	562.94	1.5	ANNUAL	PAREA1	5
689062.05	4284301.6	0.26782	532.67	532.67	1.5	ANNUAL	PAREA1	5
689112.05	4284301.6	0.31315	536.78	536.78	1.5	ANNUAL	PAREA1	5
689162.05	4284301.6	0.36901	538.53	538.53	1.5	ANNUAL	PAREA1	5
689062.05	4284451.6	0.26929	531.02	536.85	1.5	ANNUAL	PAREA1	5
689062.05	4284501.6	0.2703	533.31	535.53	1.5	ANNUAL	PAREA1	5
689112.05	4284501.6	0.30947	532.5	532.5	1.5	ANNUAL	PAREA1	5
689062.05	4284551.6	0.2733	537.07	537.07	1.5	ANNUAL	PAREA1	5
689112.05	4284551.6	0.30846	534.33	534.33	1.5	ANNUAL	PAREA1	5
689162.05	4284551.6	0.35649	533.1	533.1	1.5	ANNUAL	PAREA1	5
689969.65	4283460.3	1.53146	507.01	538.72	1.5	ANNUAL	PAREA1	5
690019.65	4283460.3	1.01726	492.39	550.78	1.5	ANNUAL	PAREA1	5
690069.65	4283460.3	0.77568	484.49	551.4	1.5	ANNUAL	PAREA1	5
690119.65	4283460.3	0.63336	486.32	563.68	1.5	ANNUAL	PAREA1	5
690169.65	4283460.3	0.53728	490.92	563.68	1.5	ANNUAL	PAREA1	5
690219.65	4283460.3	0.46817	499.06	551.4	1.5	ANNUAL	PAREA1	5
689969.65	4283510.3	1.46556	497.46	550.78	1.5	ANNUAL	PAREA1	5
690019.65	4283510.3	1.01826	488.83	550.78	1.5	ANNUAL	PAREA1	5

690069.65	4283510.3	0.79258	495.55	550.47	1.5	ANNUAL	PAREA1	5
690119.65	4283510.3	0.65239	501.98	543.27	1.5	ANNUAL	PAREA1	5
690169.65	4283510.3	0.55188	504.5	550.47	1.5	ANNUAL	PAREA1	5
690219.65	4283510.3	0.47438	504.32	550.47	1.5	ANNUAL	PAREA1	5
689919.65	4283560.3	2.14079	500.59	550.78	1.5	ANNUAL	PAREA1	5
689969.65	4283560.3	1.40356	491.02	550.78	1.5	ANNUAL	PAREA1	5
690019.65	4283560.3	1.03547	505.09	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283560.3	0.82454	514.17	538.72	1.5	ANNUAL	PAREA1	5
690119.65	4283560.3	0.68013	518.23	538.72	1.5	ANNUAL	PAREA1	5
690169.65	4283560.3	0.56764	515.75	538.72	1.5	ANNUAL	PAREA1	5
690219.65	4283560.3	0.47967	508.35	550.47	1.5	ANNUAL	PAREA1	5
689919.65	4283610.3	1.94681	498.55	550.78	1.5	ANNUAL	PAREA1	5
689969.65	4283610.3	1.35759	496.27	550.78	1.5	ANNUAL	PAREA1	5
690019.65	4283610.3	1.04352	512.4	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283610.3	0.85527	525.28	538.72	1.5	ANNUAL	PAREA1	5
690119.65	4283610.3	0.70462	528.65	538.51	1.5	ANNUAL	PAREA1	5
690169.65	4283610.3	0.57484	519.44	538.72	1.5	ANNUAL	PAREA1	5
690219.65	4283610.3	0.47688	503.1	551.4	1.5	ANNUAL	PAREA1	5
689919.65	4283660.3	1.85708	499.92	550.78	1.5	ANNUAL	PAREA1	5
689969.65	4283660.3	1.33235	504.28	538.82	1.5	ANNUAL	PAREA1	5
690019.65	4283660.3	1.06049	521.19	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283660.3	0.88435	533.88	538.72	1.5	ANNUAL	PAREA1	5
690119.65	4283660.3	0.705	528.27	538.72	1.5	ANNUAL	PAREA1	5
690169.65	4283660.3	0.57032	515.1	538.72	1.5	ANNUAL	PAREA1	5
690219.65	4283660.3	0.47025	493.19	577.58	1.5	ANNUAL	PAREA1	5
689869.65	4283710.3	3.00031	523.96	527.99	1.5	ANNUAL	PAREA1	5
689919.65	4283710.3	1.80645	501.37	552.14	1.5	ANNUAL	PAREA1	5
689969.65	4283710.3	1.31015	506.06	539.3	1.5	ANNUAL	PAREA1	5
690019.65	4283710.3	1.0767	527.62	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283710.3	0.88332	534.47	538.72	1.5	ANNUAL	PAREA1	5
690119.65	4283710.3	0.6944	523.3	538.72	1.5	ANNUAL	PAREA1	5
690169.65	4283710.3	0.56069	506.65	550.47	1.5	ANNUAL	PAREA1	5
690219.65	4283710.3	0.46696	489.26	602.25	1.5	ANNUAL	PAREA1	5
689919.65	4283760.3	1.76879	498.71	562.94	1.5	ANNUAL	PAREA1	5
689969.65	4283760.3	1.29623	508.33	552.12	1.5	ANNUAL	PAREA1	5
690019.65	4283760.3	1.06039	526.17	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283760.3	0.8579	528.49	538.72	1.5	ANNUAL	PAREA1	5
690119.65	4283760.3	0.68308	517.84	538.72	1.5	ANNUAL	PAREA1	5
690169.65	4283760.3	0.56147	508.22	552.14	1.5	ANNUAL	PAREA1	5
690219.65	4283760.3	0.47802	507.28	552.14	1.5	ANNUAL	PAREA1	5
689919.65	4283810.3	1.74635	500.38	562.94	1.5	ANNUAL	PAREA1	5
689969.65	4283810.3	1.28236	509.18	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4283810.3	1.0497	526.12	538.72	1.5	ANNUAL	PAREA1	5
690069.65	4283810.3	0.85888	530.76	530.76	1.5	ANNUAL	PAREA1	5
690119.65	4283810.3	0.69535	525.93	531.2	1.5	ANNUAL	PAREA1	5
690169.65	4283810.3	0.58079	525.2	525.2	1.5	ANNUAL	PAREA1	5
690219.65	4283810.3	0.48997	522.63	527.67	1.5	ANNUAL	PAREA1	5
689919.65	4283860.3	1.72331	500.23	563.99	1.5	ANNUAL	PAREA1	5
689969.65	4283860.3	1.27172	511.01	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4283860.3	1.04036	526.53	526.53	1.5	ANNUAL	PAREA1	5
690069.65	4283860.3	0.85145	530.48	530.48	1.5	ANNUAL	PAREA1	5
690119.65	4283860.3	0.69673	528.36	528.36	1.5	ANNUAL	PAREA1	5
690169.65	4283860.3	0.58311	528.39	528.39	1.5	ANNUAL	PAREA1	5
690219.65	4283860.3	0.48898	523.99	530.72	1.5	ANNUAL	PAREA1	5
689919.65	4283910.3	1.70862	505.05	562.94	1.5	ANNUAL	PAREA1	5

689969.65	4283910.3	1.26268	513.65	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4283910.3	1.01784	523.37	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4283910.3	0.8428	529.8	529.8	1.5	ANNUAL	PAREA1	5
690119.65	4283910.3	0.69932	531.52	531.52	1.5	ANNUAL	PAREA1	5
690169.65	4283910.3	0.5842	530.94	530.94	1.5	ANNUAL	PAREA1	5
690219.65	4283910.3	0.48994	527.58	527.58	1.5	ANNUAL	PAREA1	5
689919.65	4283960.3	1.69378	510.72	562.94	1.5	ANNUAL	PAREA1	5
689969.65	4283960.3	1.2706	521.03	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4283960.3	1.02391	527.86	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4283960.3	0.8412	531.46	550.99	1.5	ANNUAL	PAREA1	5
690119.65	4283960.3	0.70389	534.98	534.98	1.5	ANNUAL	PAREA1	5
690169.65	4283960.3	0.58425	532.81	537.82	1.5	ANNUAL	PAREA1	5
690219.65	4283960.3	0.48404	525.19	552.14	1.5	ANNUAL	PAREA1	5
689919.65	4284010.3	1.66217	512.8	562.94	1.5	ANNUAL	PAREA1	5
689969.65	4284010.3	1.25766	522.22	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4284010.3	1.02135	529.6	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4284010.3	0.84567	534.57	552.12	1.5	ANNUAL	PAREA1	5
690119.65	4284010.3	0.71141	537.97	537.97	1.5	ANNUAL	PAREA1	5
690169.65	4284010.3	0.58383	534.28	551.55	1.5	ANNUAL	PAREA1	5
690219.65	4284010.3	0.47938	524.43	564.77	1.5	ANNUAL	PAREA1	5
689919.65	4284060.3	1.64027	517.74	562.94	1.5	ANNUAL	PAREA1	5
689969.65	4284060.3	1.25415	524.5	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4284060.3	1.03033	533.27	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4284060.3	0.86042	538.63	552.14	1.5	ANNUAL	PAREA1	5
690119.65	4284060.3	0.72228	540.3	552.12	1.5	ANNUAL	PAREA1	5
690169.65	4284060.3	0.5802	534.39	552.14	1.5	ANNUAL	PAREA1	5
690219.65	4284060.3	0.48373	531.98	564.22	1.5	ANNUAL	PAREA1	5
689969.65	4284110.3	1.29286	532.66	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4284110.3	1.07033	540.2	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4284110.3	0.93414	545.03	552	1.5	ANNUAL	PAREA1	5
690119.65	4284110.3	0.75541	543.76	552.14	1.5	ANNUAL	PAREA1	5
690169.65	4284110.3	0.58452	537.37	552.14	1.5	ANNUAL	PAREA1	5
690219.65	4284110.3	0.49798	539.23	551.07	1.5	ANNUAL	PAREA1	5
689969.65	4284160.3	1.33954	539	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4284160.3	1.17001	546.12	551.38	1.5	ANNUAL	PAREA1	5
690069.65	4284160.3	0.93531	551.03	551.03	1.5	ANNUAL	PAREA1	5
690119.65	4284160.3	0.77544	550.52	550.52	1.5	ANNUAL	PAREA1	5
690169.65	4284160.3	0.64465	545.48	551.96	1.5	ANNUAL	PAREA1	5
690219.65	4284160.3	0.49388	539.66	564.42	1.5	ANNUAL	PAREA1	5
689919.65	4284210.3	1.6666	530.87	552.14	1.5	ANNUAL	PAREA1	5
689969.65	4284210.3	1.34764	539.95	552.08	1.5	ANNUAL	PAREA1	5
690019.65	4284210.3	1.16545	545.98	551.35	1.5	ANNUAL	PAREA1	5
690069.65	4284210.3	0.93879	550.41	550.41	1.5	ANNUAL	PAREA1	5
690119.65	4284210.3	0.774	549.97	549.97	1.5	ANNUAL	PAREA1	5
690169.65	4284210.3	0.6503	547.83	549.53	1.5	ANNUAL	PAREA1	5
690219.65	4284210.3	0.5268	544.9	564.22	1.5	ANNUAL	PAREA1	5
689869.65	4284260.3	2.34607	520.14	562.94	1.5	ANNUAL	PAREA1	5
689919.65	4284260.3	1.62062	524.4	552.14	1.5	ANNUAL	PAREA1	5
689969.65	4284260.3	1.32393	537.15	552.14	1.5	ANNUAL	PAREA1	5
690019.65	4284260.3	1.08663	541.61	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4284260.3	0.9187	544.61	551.67	1.5	ANNUAL	PAREA1	5
690119.65	4284260.3	0.77213	546.11	546.11	1.5	ANNUAL	PAREA1	5
690169.65	4284260.3	0.63784	546.3	563.68	1.5	ANNUAL	PAREA1	5
690219.65	4284260.3	0.53311	547.85	564.32	1.5	ANNUAL	PAREA1	5
689919.65	4284310.3	1.63605	523.32	563.68	1.5	ANNUAL	PAREA1	5

689969.65	4284310.3	1.28067	529.44	562.73	1.5	ANNUAL	PAREA1	5
690019.65	4284310.3	1.05104	536.25	552.14	1.5	ANNUAL	PAREA1	5
690069.65	4284310.3	0.85138	538.25	563.68	1.5	ANNUAL	PAREA1	5
690119.65	4284310.3	0.70752	541.32	564.25	1.5	ANNUAL	PAREA1	5
690169.65	4284310.3	0.61919	545.48	564.32	1.5	ANNUAL	PAREA1	5
690219.65	4284310.3	0.5177	549.16	564.35	1.5	ANNUAL	PAREA1	5
689919.65	4284360.3	1.71605	527.45	552.14	1.5	ANNUAL	PAREA1	5
689969.65	4284360.3	1.305	528.54	563.78	1.5	ANNUAL	PAREA1	5
690019.65	4284360.3	1.04488	532.77	564.06	1.5	ANNUAL	PAREA1	5
690069.65	4284360.3	0.84041	535.72	564.32	1.5	ANNUAL	PAREA1	5
690119.65	4284360.3	0.68992	539.82	564.35	1.5	ANNUAL	PAREA1	5
690169.65	4284360.3	0.60388	545.24	564.32	1.5	ANNUAL	PAREA1	5
690219.65	4284360.3	0.5047	548.82	564.41	1.5	ANNUAL	PAREA1	5
689919.65	4284410.3	1.83096	527.07	527.07	1.5	ANNUAL	PAREA1	5
689969.65	4284410.3	1.34333	526.11	602.25	1.5	ANNUAL	PAREA1	5
690019.65	4284410.3	1.08012	535.45	535.63	1.5	ANNUAL	PAREA1	5
690069.65	4284410.3	0.85246	537.95	563.78	1.5	ANNUAL	PAREA1	5
690119.65	4284410.3	0.68361	540.49	564.32	1.5	ANNUAL	PAREA1	5
690169.65	4284410.3	0.58819	545.4	564.32	1.5	ANNUAL	PAREA1	5
690219.65	4284410.3	0.48786	548.47	601.86	1.5	ANNUAL	PAREA1	5
689919.65	4284460.3	2.02245	524.64	602.25	1.5	ANNUAL	PAREA1	5
689969.65	4284460.3	1.44124	529.09	602.25	1.5	ANNUAL	PAREA1	5
690019.65	4284460.3	1.10021	535.26	537.89	1.5	ANNUAL	PAREA1	5
690069.65	4284460.3	0.85831	539.45	539.45	1.5	ANNUAL	PAREA1	5
690119.65	4284460.3	0.67882	542.19	602.25	1.5	ANNUAL	PAREA1	5
690169.65	4284460.3	0.57976	547.11	602.25	1.5	ANNUAL	PAREA1	5
690219.65	4284460.3	0.45491	551.32	602.25	1.5	ANNUAL	PAREA1	5
689243.81	4283030.6	0.17229	530.88	530.88	1.5	ANNUAL	PAREA1	5
689293.81	4283030.6	0.19123	529.46	529.46	1.5	ANNUAL	PAREA1	5
689343.81	4283030.6	0.21225	525.17	536.56	1.5	ANNUAL	PAREA1	5
689393.81	4283030.6	0.23946	525.12	525.12	1.5	ANNUAL	PAREA1	5
689443.81	4283030.6	0.27358	524.98	524.98	1.5	ANNUAL	PAREA1	5
689493.81	4283030.6	0.31594	524.32	524.32	1.5	ANNUAL	PAREA1	5
689543.81	4283030.6	0.36866	525.16	525.16	1.5	ANNUAL	PAREA1	5
689243.81	4283080.6	0.1824	531.25	531.25	1.5	ANNUAL	PAREA1	5
689293.81	4283080.6	0.2042	529.07	537.17	1.5	ANNUAL	PAREA1	5
689343.81	4283080.6	0.23025	527.74	537.55	1.5	ANNUAL	PAREA1	5
689393.81	4283080.6	0.26145	526.5	537.55	1.5	ANNUAL	PAREA1	5
689443.81	4283080.6	0.30235	526.2	527.36	1.5	ANNUAL	PAREA1	5
689493.81	4283080.6	0.35869	526.65	526.65	1.5	ANNUAL	PAREA1	5
689543.81	4283080.6	0.43158	526.02	526.02	1.5	ANNUAL	PAREA1	5
689243.81	4283130.6	0.19325	534.77	534.77	1.5	ANNUAL	PAREA1	5
689293.81	4283130.6	0.22105	535.63	535.63	1.5	ANNUAL	PAREA1	5
689343.81	4283130.6	0.25171	534.08	537.42	1.5	ANNUAL	PAREA1	5
689393.81	4283130.6	0.28818	531.63	531.63	1.5	ANNUAL	PAREA1	5
689443.81	4283130.6	0.33773	529.14	529.14	1.5	ANNUAL	PAREA1	5
689493.81	4283130.6	0.41868	527.9	527.9	1.5	ANNUAL	PAREA1	5
689543.81	4283130.6	0.53612	526.15	526.15	1.5	ANNUAL	PAREA1	5
689243.81	4283180.6	0.20041	536.01	536.01	1.5	ANNUAL	PAREA1	5
689293.81	4283180.6	0.23136	537.11	537.11	1.5	ANNUAL	PAREA1	5
689343.81	4283180.6	0.26923	537.22	537.22	1.5	ANNUAL	PAREA1	5
689393.81	4283180.6	0.31259	534.34	534.34	1.5	ANNUAL	PAREA1	5
689443.81	4283180.6	0.37707	531.36	531.36	1.5	ANNUAL	PAREA1	5
689493.81	4283180.6	0.52756	529.32	529.32	1.5	ANNUAL	PAREA1	5
689543.81	4283180.6	0.75384	527.27	527.27	1.5	ANNUAL	PAREA1	5

689243.81	4283230.6	0.20645	535.82	535.82	1.5	ANNUAL	PAREA1	5
689293.81	4283230.6	0.23902	537.32	537.32	1.5	ANNUAL	PAREA1	5
689343.81	4283230.6	0.27813	537.15	537.15	1.5	ANNUAL	PAREA1	5
689393.81	4283230.6	0.32678	534.6	534.6	1.5	ANNUAL	PAREA1	5
689443.81	4283230.6	0.406	531.93	531.93	1.5	ANNUAL	PAREA1	5
689243.81	4283280.6	0.21522	535.51	535.51	1.5	ANNUAL	PAREA1	5
689293.81	4283280.6	0.2496	536.93	536.93	1.5	ANNUAL	PAREA1	5
689343.81	4283280.6	0.29022	536.13	536.13	1.5	ANNUAL	PAREA1	5
689393.81	4283280.6	0.34495	533.93	533.93	1.5	ANNUAL	PAREA1	5
689443.81	4283280.6	0.44863	531.24	531.24	1.5	ANNUAL	PAREA1	5
689243.81	4283330.6	0.2255	534.37	534.37	1.5	ANNUAL	PAREA1	5
689293.81	4283330.6	0.26164	534.76	534.76	1.5	ANNUAL	PAREA1	5
689343.81	4283330.6	0.30783	533.41	533.41	1.5	ANNUAL	PAREA1	5
689393.81	4283330.6	0.37628	531.98	531.98	1.5	ANNUAL	PAREA1	5
689443.81	4283330.6	0.51675	531.69	531.69	1.5	ANNUAL	PAREA1	5
689493.81	4283330.6	0.88837	529.94	529.94	1.5	ANNUAL	PAREA1	5
689243.81	4283380.6	0.23878	533.68	533.68	1.5	ANNUAL	PAREA1	5
689293.81	4283380.6	0.27897	534.32	534.32	1.5	ANNUAL	PAREA1	5
689343.81	4283380.6	0.33453	535	535	1.5	ANNUAL	PAREA1	5
689393.81	4283380.6	0.41561	534.7	535.45	1.5	ANNUAL	PAREA1	5
689443.81	4283380.6	0.55426	534.75	535.85	1.5	ANNUAL	PAREA1	5
689243.81	4283430.6	0.25349	533.36	533.36	1.5	ANNUAL	PAREA1	5
689293.81	4283430.6	0.2978	534.26	534.26	1.5	ANNUAL	PAREA1	5
689343.81	4283430.6	0.35969	535.27	535.27	1.5	ANNUAL	PAREA1	5
689393.81	4283430.6	0.45045	536.17	536.17	1.5	ANNUAL	PAREA1	5
689443.81	4283430.6	0.58837	537.27	537.27	1.5	ANNUAL	PAREA1	5
689243.81	4283480.6	0.26845	533.09	533.09	1.5	ANNUAL	PAREA1	5
689293.81	4283480.6	0.31715	534.21	534.21	1.5	ANNUAL	PAREA1	5
689343.81	4283480.6	0.38342	534.93	534.93	1.5	ANNUAL	PAREA1	5
689393.81	4283480.6	0.47971	536.06	550.7	1.5	ANNUAL	PAREA1	5
689443.81	4283480.6	0.62204	537.64	550.76	1.5	ANNUAL	PAREA1	5
689493.81	4283480.6	0.82529	539.69	550.7	1.5	ANNUAL	PAREA1	5
689584.29	4283182	0.87638	525.58	525.58	1.5	ANNUAL	PAREA1	5
689626.46	4283180.8	0.96038	519.89	527.35	1.5	ANNUAL	PAREA1	5
689581.46	4283081.8	0.49338	522.81	525.66	1.5	ANNUAL	PAREA1	5
689586.89	4283032.1	0.41885	520.25	525.64	1.5	ANNUAL	PAREA1	5
689628.89	4283033.2	0.46991	514.93	526.85	1.5	ANNUAL	PAREA1	5
690123.39	4283039.1	0.55376	502.42	515.39	1.5	ANNUAL	PAREA1	5
690123.39	4283089.1	0.58373	504.85	515.62	1.5	ANNUAL	PAREA1	5
690173.39	4283089.1	0.51951	513.46	513.61	1.5	ANNUAL	PAREA1	5
689923.39	4283139.1	1.14146	519.16	519.16	1.5	ANNUAL	PAREA1	5
689950.32	4283366.6	2.05737	521.49	529.62	1.5	ANNUAL	PAREA1	5
690000.32	4283366.6	1.22846	525.34	525.34	1.5	ANNUAL	PAREA1	5
689946.72	4283397.8	2.16442	522.25	529.64	1.5	ANNUAL	PAREA1	5
689990.74	4283392	1.3303	524.47	526.53	1.5	ANNUAL	PAREA1	5
690047.5	4284607.9	0.93571	537.17	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284607.9	0.6276	537.61	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284607.9	0.49068	539.87	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284607.9	0.42361	544.63	603.34	1.5	ANNUAL	PAREA1	5
690047.5	4284657.9	0.8817	534.61	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284657.9	0.58777	535.78	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284657.9	0.46732	538.41	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284657.9	0.40923	544.27	603.34	1.5	ANNUAL	PAREA1	5
689997.5	4284707.9	1.39821	533.29	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284707.9	0.58103	535.32	603.34	1.5	ANNUAL	PAREA1	5

690147.5	4284707.9	0.46034	537.81	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284707.9	0.39921	543.18	603.34	1.5	ANNUAL	PAREA1	5
690047.5	4284757.9	0.79713	535.23	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284757.9	0.57575	536.4	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284757.9	0.4527	536.99	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284757.9	0.38763	541.31	603.34	1.5	ANNUAL	PAREA1	5
689947.5	4284807.9	1.13689	536.71	536.71	1.5	ANNUAL	PAREA1	5
690047.5	4284807.9	0.72104	535.92	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284807.9	0.56071	537.61	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284807.9	0.44588	537.73	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284807.9	0.37699	539.99	603.34	1.5	ANNUAL	PAREA1	5
689897.5	4284857.9	1.12199	536.76	536.76	1.5	ANNUAL	PAREA1	5
689947.5	4284857.9	0.97409	537.24	537.24	1.5	ANNUAL	PAREA1	5
689997.5	4284857.9	0.8152	536.94	536.94	1.5	ANNUAL	PAREA1	5
690047.5	4284857.9	0.6612	536.64	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284857.9	0.53746	538.34	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284857.9	0.44298	540.07	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284857.9	0.37553	541.59	603.34	1.5	ANNUAL	PAREA1	5
690247.5	4284857.9	0.33399	544.85	603.34	1.5	ANNUAL	PAREA1	5
689847.5	4284907.9	1.10673	538.64	538.64	1.5	ANNUAL	PAREA1	5
689897.5	4284907.9	0.97425	537.77	537.77	1.5	ANNUAL	PAREA1	5
689947.5	4284907.9	0.84813	537.08	537.08	1.5	ANNUAL	PAREA1	5
689997.5	4284907.9	0.72667	537.13	537.13	1.5	ANNUAL	PAREA1	5
690047.5	4284907.9	0.61169	537.74	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284907.9	0.51018	538.55	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284907.9	0.43307	540.93	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284907.9	0.37108	542.51	603.34	1.5	ANNUAL	PAREA1	5
690247.5	4284907.9	0.32602	544.49	603.34	1.5	ANNUAL	PAREA1	5
689797.5	4284957.9	1.05204	539.55	539.55	1.5	ANNUAL	PAREA1	5
689847.5	4284957.9	0.96432	540.19	540.19	1.5	ANNUAL	PAREA1	5
689897.5	4284957.9	0.86034	539.27	539.27	1.5	ANNUAL	PAREA1	5
689947.5	4284957.9	0.75449	537.89	537.89	1.5	ANNUAL	PAREA1	5
689997.5	4284957.9	0.65418	537.13	537.13	1.5	ANNUAL	PAREA1	5
690047.5	4284957.9	0.56361	537.72	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4284957.9	0.48515	539.34	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4284957.9	0.41766	540.89	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4284957.9	0.36155	542.29	603.34	1.5	ANNUAL	PAREA1	5
690247.5	4284957.9	0.31863	544.24	603.34	1.5	ANNUAL	PAREA1	5
689897.5	4285007.9	0.76309	539.86	539.86	1.5	ANNUAL	PAREA1	5
689947.5	4285007.9	0.67174	537.26	537.26	1.5	ANNUAL	PAREA1	5
689997.5	4285007.9	0.59369	537.14	537.14	1.5	ANNUAL	PAREA1	5
690047.5	4285007.9	0.51886	537.14	603.34	1.5	ANNUAL	PAREA1	5
690097.5	4285007.9	0.45249	537.99	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4285007.9	0.39736	539.94	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4285007.9	0.35062	541.95	603.34	1.5	ANNUAL	PAREA1	5
690247.5	4285007.9	0.31223	544.25	603.34	1.5	ANNUAL	PAREA1	5
689897.5	4285057.9	0.69182	541.78	547.75	1.5	ANNUAL	PAREA1	5
689947.5	4285057.9	0.61642	539.62	562.37	1.5	ANNUAL	PAREA1	5
689997.5	4285057.9	0.54411	537.63	562.37	1.5	ANNUAL	PAREA1	5
690047.5	4285057.9	0.48094	537.14	589.12	1.5	ANNUAL	PAREA1	5
690097.5	4285057.9	0.42367	537.19	603.34	1.5	ANNUAL	PAREA1	5
690147.5	4285057.9	0.37739	539.16	603.34	1.5	ANNUAL	PAREA1	5
690197.5	4285057.9	0.33844	541.58	603.34	1.5	ANNUAL	PAREA1	5
690247.5	4285057.9	0.30462	544.06	603.34	1.5	ANNUAL	PAREA1	5
689970.15	4284514.1	1.6292	535.22	537.9	1.5	ANNUAL	PAREA1	5

690020.15	4284514.1	1.15458	538.37	538.37	1.5	ANNUAL	PAREA1	5
690070.15	4284514.1	0.84707	540.11	602.25	1.5	ANNUAL	PAREA1	5
690120.15	4284514.1	0.65226	542.8	603.34	1.5	ANNUAL	PAREA1	5
690170.15	4284514.1	0.54572	547.04	603.34	1.5	ANNUAL	PAREA1	5
690220.15	4284514.1	0.43273	550.47	603.34	1.5	ANNUAL	PAREA1	5
690020.15	4284564.1	1.19893	538.57	538.57	1.5	ANNUAL	PAREA1	5
690070.15	4284564.1	0.82066	540.15	603.34	1.5	ANNUAL	PAREA1	5
690120.15	4284564.1	0.59997	540.79	603.34	1.5	ANNUAL	PAREA1	5
690170.15	4284564.1	0.4915	544.31	603.34	1.5	ANNUAL	PAREA1	5
690220.15	4284564.1	0.41874	547.27	603.34	1.5	ANNUAL	PAREA1	5
689216.55	4284759	0.37618	535.39	535.39	1.5	ANNUAL	PAREA1	5
689266.55	4284759	0.43743	537.06	537.06	1.5	ANNUAL	PAREA1	5
689316.55	4284759	0.50841	536.91	536.91	1.5	ANNUAL	PAREA1	5
689366.55	4284759	0.59327	535.98	535.98	1.5	ANNUAL	PAREA1	5
689416.55	4284759	0.70252	536.01	536.01	1.5	ANNUAL	PAREA1	5
689466.55	4284759	0.85809	536.56	536.56	1.5	ANNUAL	PAREA1	5
689516.55	4284759	1.12407	537.28	537.28	1.5	ANNUAL	PAREA1	5
689216.55	4284809	0.3647	535.86	535.86	1.5	ANNUAL	PAREA1	5
689266.55	4284809	0.42026	537.23	537.23	1.5	ANNUAL	PAREA1	5
689316.55	4284809	0.4846	537.23	537.23	1.5	ANNUAL	PAREA1	5
689366.55	4284809	0.56159	536.51	536.51	1.5	ANNUAL	PAREA1	5
689416.55	4284809	0.65982	536.17	536.17	1.5	ANNUAL	PAREA1	5
689566.55	4284809	1.34995	538.51	538.51	1.5	ANNUAL	PAREA1	5
689216.55	4284859	0.35328	536.46	536.46	1.5	ANNUAL	PAREA1	5
689266.55	4284859	0.40111	536.42	536.42	1.5	ANNUAL	PAREA1	5
689316.55	4284859	0.46128	537.1	537.1	1.5	ANNUAL	PAREA1	5
689366.55	4284859	0.53365	537.27	537.27	1.5	ANNUAL	PAREA1	5
689466.55	4284859	0.74312	537.37	537.37	1.5	ANNUAL	PAREA1	5
689516.55	4284859	0.91904	538.75	538.75	1.5	ANNUAL	PAREA1	5
689566.55	4284859	1.19777	539.75	539.75	1.5	ANNUAL	PAREA1	5
689666.55	4284859	1.86476	538.58	538.58	1.5	ANNUAL	PAREA1	5
689266.55	4284909	0.38444	536.38	536.38	1.5	ANNUAL	PAREA1	5
689316.55	4284909	0.43875	536.86	536.86	1.5	ANNUAL	PAREA1	5
689366.55	4284909	0.50517	537.48	537.48	1.5	ANNUAL	PAREA1	5
689416.55	4284909	0.58602	537.67	537.67	1.5	ANNUAL	PAREA1	5
689466.55	4284909	0.68841	537.65	537.65	1.5	ANNUAL	PAREA1	5
689616.55	4284909	1.2786	540.33	540.33	1.5	ANNUAL	PAREA1	5
689216.55	4284959	0.32931	537.22	549.49	1.5	ANNUAL	PAREA1	5
689366.55	4284959	0.47516	537.23	537.23	1.5	ANNUAL	PAREA1	5
689416.55	4284959	0.54545	537.26	537.26	1.5	ANNUAL	PAREA1	5
689466.55	4284959	0.64428	539.97	539.97	1.5	ANNUAL	PAREA1	5
689516.55	4284959	0.76151	540.7	540.7	1.5	ANNUAL	PAREA1	5
689566.55	4284959	0.90363	540.97	540.97	1.5	ANNUAL	PAREA1	5
689616.55	4284959	1.05197	541.19	541.19	1.5	ANNUAL	PAREA1	5
689216.55	4285009	0.32047	539.29	539.29	1.5	ANNUAL	PAREA1	5
689366.55	4285009	0.45064	538.57	538.57	1.5	ANNUAL	PAREA1	5
689416.55	4285009	0.51131	538.22	548.48	1.5	ANNUAL	PAREA1	5
689566.55	4285009	0.80027	542.84	542.84	1.5	ANNUAL	PAREA1	5
689712.61	4284806.3	2.4171	537.24	537.24	1.5	ANNUAL	PAREA1	5
689665.5	4284822.9	2.29365	537.58	537.58	1.5	ANNUAL	PAREA1	5
689153.77	4285125.1	0.27927	546.88	546.88	1.5	ANNUAL	PAREA1	5
689203.77	4285125.1	0.30528	547.16	547.16	1.5	ANNUAL	PAREA1	5
689303.77	4285125.1	0.36744	546.19	546.19	1.5	ANNUAL	PAREA1	5
689353.77	4285125.1	0.40465	545.84	545.84	1.5	ANNUAL	PAREA1	5
689603.77	4285125.1	0.65713	546.36	546.36	1.5	ANNUAL	PAREA1	5

689653.77	4285125.1	0.69717	546.88	546.88	1.5	ANNUAL	PAREA1	5
689703.77	4285125.1	0.71535	548.13	548.13	1.5	ANNUAL	PAREA1	5
689803.77	4285125.1	0.69786	546.79	546.79	1.5	ANNUAL	PAREA1	5
689853.77	4285125.1	0.66521	547.33	547.33	1.5	ANNUAL	PAREA1	5
689903.77	4285125.1	0.62012	548.27	548.27	1.5	ANNUAL	PAREA1	5
689953.77	4285125.1	0.57182	546.64	562.17	1.5	ANNUAL	PAREA1	5
690003.77	4285125.1	0.50756	543.82	562.55	1.5	ANNUAL	PAREA1	5
690103.77	4285125.1	0.39287	539.54	589.12	1.5	ANNUAL	PAREA1	5
689153.77	4285175.1	0.26766	547.57	547.57	1.5	ANNUAL	PAREA1	5
689203.77	4285175.1	0.28953	549.41	549.41	1.5	ANNUAL	PAREA1	5
689303.77	4285175.1	0.34795	547.49	547.49	1.5	ANNUAL	PAREA1	5
689353.77	4285175.1	0.38032	546.38	546.38	1.5	ANNUAL	PAREA1	5
689603.77	4285175.1	0.58627	547.53	547.53	1.5	ANNUAL	PAREA1	5
689653.77	4285175.1	0.61448	548.26	548.26	1.5	ANNUAL	PAREA1	5
689703.77	4285175.1	0.62736	549.55	549.55	1.5	ANNUAL	PAREA1	5
689753.77	4285175.1	0.6279	549.68	561.21	1.5	ANNUAL	PAREA1	5
689803.77	4285175.1	0.61938	547.91	561.96	1.5	ANNUAL	PAREA1	5
689853.77	4285175.1	0.59292	549	562.37	1.5	ANNUAL	PAREA1	5
689903.77	4285175.1	0.55215	551.59	562.17	1.5	ANNUAL	PAREA1	5
689953.77	4285175.1	0.5156	550.86	562.37	1.5	ANNUAL	PAREA1	5
690003.77	4285175.1	0.48081	547.4	563.2	1.5	ANNUAL	PAREA1	5
689153.77	4285225.1	0.25595	548.23	548.23	1.5	ANNUAL	PAREA1	5
689203.77	4285225.1	0.27536	549.82	549.82	1.5	ANNUAL	PAREA1	5
689253.77	4285225.1	0.2989	549.75	549.75	1.5	ANNUAL	PAREA1	5
689303.77	4285225.1	0.32662	548.54	548.54	1.5	ANNUAL	PAREA1	5
689353.77	4285225.1	0.35713	546.86	546.86	1.5	ANNUAL	PAREA1	5
689403.77	4285225.1	0.38967	547.47	547.47	1.5	ANNUAL	PAREA1	5
689453.77	4285225.1	0.42452	547.58	547.58	1.5	ANNUAL	PAREA1	5
689503.77	4285225.1	0.46068	546.85	546.85	1.5	ANNUAL	PAREA1	5
689553.77	4285225.1	0.49503	548.05	548.05	1.5	ANNUAL	PAREA1	5
689603.77	4285225.1	0.52411	549.25	549.25	1.5	ANNUAL	PAREA1	5
689653.77	4285225.1	0.54485	550.38	562.2	1.5	ANNUAL	PAREA1	5
689703.77	4285225.1	0.53971	552.04	562.2	1.5	ANNUAL	PAREA1	5
689753.77	4285225.1	0.53673	552.5	562.19	1.5	ANNUAL	PAREA1	5
689803.77	4285225.1	0.54993	550.34	562.19	1.5	ANNUAL	PAREA1	5
689853.77	4285225.1	0.5279	551.71	562.37	1.5	ANNUAL	PAREA1	5
689903.77	4285225.1	0.45173	556.17	562.28	1.5	ANNUAL	PAREA1	5
689953.77	4285225.1	0.43606	554.54	562.37	1.5	ANNUAL	PAREA1	5
690003.77	4285225.1	0.44098	550	563.77	1.5	ANNUAL	PAREA1	5
690053.77	4285225.1	0.37948	553.16	562.98	1.5	ANNUAL	PAREA1	5
689153.77	4285275.1	0.24356	549.46	549.46	1.5	ANNUAL	PAREA1	5
689203.77	4285275.1	0.26104	550.54	550.54	1.5	ANNUAL	PAREA1	5
689253.77	4285275.1	0.28329	549.45	549.45	1.5	ANNUAL	PAREA1	5
689303.77	4285275.1	0.30726	549.07	549.07	1.5	ANNUAL	PAREA1	5
689353.77	4285275.1	0.33404	548.34	548.34	1.5	ANNUAL	PAREA1	5
689403.77	4285275.1	0.36279	547.84	547.84	1.5	ANNUAL	PAREA1	5
689453.77	4285275.1	0.39257	547.81	547.81	1.5	ANNUAL	PAREA1	5
689503.77	4285275.1	0.42249	547.96	547.96	1.5	ANNUAL	PAREA1	5
689553.77	4285275.1	0.44956	549.32	549.32	1.5	ANNUAL	PAREA1	5
689603.77	4285275.1	0.46977	551.84	551.84	1.5	ANNUAL	PAREA1	5
689653.77	4285275.1	0.4642	554.37	561.65	1.5	ANNUAL	PAREA1	5
689703.77	4285275.1	0.44527	558.02	561.95	1.5	ANNUAL	PAREA1	5
689753.77	4285275.1	0.43714	558.83	561.96	1.5	ANNUAL	PAREA1	5
689803.77	4285275.1	0.4517	556.02	559.45	1.5	ANNUAL	PAREA1	5
689853.77	4285275.1	0.4186	558.28	558.28	1.5	ANNUAL	PAREA1	5

689903.77	4285275.1	0.3697	561.62	561.62	1.5	ANNUAL	PAREA1	5
689953.77	4285275.1	0.34972	561.18	561.18	1.5	ANNUAL	PAREA1	5
690003.77	4285275.1	0.34417	558.72	558.72	1.5	ANNUAL	PAREA1	5
690053.77	4285275.1	0.29868	561.16	561.16	1.5	ANNUAL	PAREA1	5
689153.77	4285325.1	0.23098	550.87	550.87	1.5	ANNUAL	PAREA1	5
689203.77	4285325.1	0.24683	551.71	551.71	1.5	ANNUAL	PAREA1	5
689253.77	4285325.1	0.26737	550.44	550.44	1.5	ANNUAL	PAREA1	5
689303.77	4285325.1	0.28895	550.06	550.06	1.5	ANNUAL	PAREA1	5
689353.77	4285325.1	0.3124	549.72	549.72	1.5	ANNUAL	PAREA1	5
689403.77	4285325.1	0.33758	549.19	549.19	1.5	ANNUAL	PAREA1	5
689453.77	4285325.1	0.36294	549.25	549.25	1.5	ANNUAL	PAREA1	5
689503.77	4285325.1	0.3885	549.02	549.02	1.5	ANNUAL	PAREA1	5
689553.77	4285325.1	0.41004	550.74	550.74	1.5	ANNUAL	PAREA1	5
689603.77	4285325.1	0.41081	554.08	554.08	1.5	ANNUAL	PAREA1	5
689653.77	4285325.1	0.40281	557.81	557.81	1.5	ANNUAL	PAREA1	5
689703.77	4285325.1	0.38229	561.6	561.6	1.5	ANNUAL	PAREA1	5
689753.77	4285325.1	0.38203	561.32	561.32	1.5	ANNUAL	PAREA1	5
689803.77	4285325.1	0.40492	557.19	557.19	1.5	ANNUAL	PAREA1	5
689853.77	4285325.1	0.37996	558.79	559.98	1.5	ANNUAL	PAREA1	5
689903.77	4285325.1	0.34474	561.23	561.23	1.5	ANNUAL	PAREA1	5
689953.77	4285325.1	0.31859	562.11	562.11	1.5	ANNUAL	PAREA1	5
690003.77	4285325.1	0.29471	562.47	562.47	1.5	ANNUAL	PAREA1	5
690053.77	4285325.1	0.27126	562.76	562.76	1.5	ANNUAL	PAREA1	5
690103.77	4285325.1	0.28357	557.6	562.73	1.5	ANNUAL	PAREA1	5
689653.19	4285078.7	0.78221	545.28	545.28	1.5	ANNUAL	PAREA1	5
689596.53	4285079.8	0.71928	544.73	544.73	1.5	ANNUAL	PAREA1	5
689417.31	4285054.4	0.49648	542.59	549.22	1.5	ANNUAL	PAREA1	5
689465.48	4285057.4	0.56255	543.96	548.14	1.5	ANNUAL	PAREA1	5
689160.76	4284611.2	0.34682	533.56	533.56	1.5	ANNUAL	PAREA1	5
689595.79	4284809.2	1.7604	538.38	538.38	1.5	ANNUAL	PAREA1	5
689614.28	4284828	1.88306	538.53	538.53	1.5	ANNUAL	PAREA1	5
689880.93	4283885.3	2.48181	512.72	562.51	1.5	ANNUAL	PAREA1	5
689878.21	4284393.2	2.45008	526.73	537.47	1.5	ANNUAL	PAREA1	5
689919.3	4284393.5	1.79658	528.52	528.52	1.5	ANNUAL	PAREA1	5
690067.31	4284711.8	0.71683	534.58	603.34	1.5	ANNUAL	PAREA1	5
689854.2	4285030.1	0.79559	541.82	541.82	1.5	ANNUAL	PAREA1	5
689832.17	4285004.4	0.87675	541.12	541.12	1.5	ANNUAL	PAREA1	5
689709.9	4284847.9	1.92266	538.26	538.26	1.5	ANNUAL	PAREA1	5
689566.83	4284730.6	1.71005	537.2	537.2	1.5	ANNUAL	PAREA1	5
689380.2	4284259.8	1.41023	547.59	562.94	1.5	ANNUAL	PAREA1	5
689367.58	4284231.4	1.16432	547.29	562.94	1.5	ANNUAL	PAREA1	5
689441.09	4283793	1.19671	540.33	540.33	1.5	ANNUAL	PAREA1	5
689436.64	4283733.9	1.04969	543.4	550.19	1.5	ANNUAL	PAREA1	5
689439.11	4283767.8	1.13404	541.84	547.9	1.5	ANNUAL	PAREA1	5
689436.64	4283689.1	0.91593	542.64	550.73	1.5	ANNUAL	PAREA1	5
689444.06	4283650.4	0.90247	543.87	550.78	1.5	ANNUAL	PAREA1	5
689500.74	4283585.6	1.37336	550.23	550.23	1.5	ANNUAL	PAREA1	5
689505.94	4283507.9	0.9305	540.29	550.76	1.5	ANNUAL	PAREA1	5
689546.04	4283356.6	1.03026	526.73	550.7	1.5	ANNUAL	PAREA1	5
689912.61	4283166	1.34183	520.34	526.34	1.5	ANNUAL	PAREA1	5

CONCUNIT /m^3
DEPUNIT g/ ^2

MODELING IONS USED: gDFAULT C ELEV FLGP OL RURA L
PLOT FILE OF ANI VALUES AVI GED ACROS 5 YEARS FOR SO URCE GRO UP: PAREA2
FOR A TOTAL OF 7 RECEPTORS.
FORM AT: (3(1X,F1),3(1X,F8.2), 2X,A6,2X,A8 2X,I8.8, 2X,A8)

X	Y	AVERAGE C	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
689212.05	4283551.6	0.09352	529.56	529.56	1.5	ANNUAL	PAREA2		5
689262.05	4283551.6	0.10408	533	533	1.5	ANNUAL	PAREA2		5
689312.05	4283551.6	0.11542	534.01	534.01	1.5	ANNUAL	PAREA2		5
689362.05	4283551.6	0.1284	534.99	550.78	1.5	ANNUAL	PAREA2		5
689412.05	4283551.6	0.1433	536.9	550.78	1.5	ANNUAL	PAREA2		5
689212.05	4283601.6	0.09697	531	534.74	1.5	ANNUAL	PAREA2		5
689262.05	4283601.6	0.10815	534.44	534.44	1.5	ANNUAL	PAREA2		5
689312.05	4283601.6	0.11882	534.18	534.18	1.5	ANNUAL	PAREA2		5
689362.05	4283601.6	0.13297	535.56	550.78	1.5	ANNUAL	PAREA2		5
689412.05	4283601.6	0.14949	537.51	550.78	1.5	ANNUAL	PAREA2		5
689262.05	4283651.6	0.11387	536.79	536.79	1.5	ANNUAL	PAREA2		5
689312.05	4283651.6	0.12406	535.84	535.84	1.5	ANNUAL	PAREA2		5
689362.05	4283651.6	0.13703	535.52	550.78	1.5	ANNUAL	PAREA2		5
689412.05	4283651.6	0.1563	538.25	550.78	1.5	ANNUAL	PAREA2		5
689212.05	4283701.6	0.10612	534.89	537.25	1.5	ANNUAL	PAREA2		5
689262.05	4283701.6	0.11832	537.42	537.42	1.5	ANNUAL	PAREA2		5
689312.05	4283701.6	0.12891	536.64	536.64	1.5	ANNUAL	PAREA2		5
689362.05	4283701.6	0.14151	535.6	550.78	1.5	ANNUAL	PAREA2		5
689412.05	4283701.6	0.1615	538.09	550.78	1.5	ANNUAL	PAREA2		5
689062.05	4283751.6	0.084	524.69	524.69	1.5	ANNUAL	PAREA2		5
689212.05	4283751.6	0.10806	532.54	537.46	1.5	ANNUAL	PAREA2		5
689262.05	4283751.6	0.11982	535.39	537.34	1.5	ANNUAL	PAREA2		5
689312.05	4283751.6	0.13028	534.12	534.12	1.5	ANNUAL	PAREA2		5
689362.05	4283751.6	0.14683	536.06	550.26	1.5	ANNUAL	PAREA2		5
689262.05	4283801.6	0.12053	530.56	537.34	1.5	ANNUAL	PAREA2		5
689312.05	4283801.6	0.13443	533.57	533.57	1.5	ANNUAL	PAREA2		5
689362.05	4283801.6	0.1526	536.5	536.5	1.5	ANNUAL	PAREA2		5
689412.05	4283801.6	0.17666	539.35	539.35	1.5	ANNUAL	PAREA2		5
689212.05	4283851.6	0.11376	527.68	527.68	1.5	ANNUAL	PAREA2		5
689262.05	4283851.6	0.12498	530.07	530.07	1.5	ANNUAL	PAREA2		5
689312.05	4283851.6	0.13944	533.41	533.41	1.5	ANNUAL	PAREA2		5
689362.05	4283851.6	0.15807	536.38	536.38	1.5	ANNUAL	PAREA2		5
689412.05	4283851.6	0.17904	537.57	537.57	1.5	ANNUAL	PAREA2		5
689062.05	4283901.6	0.08792	529.18	537.59	1.5	ANNUAL	PAREA2		5
689112.05	4283901.6	0.09718	525.89	525.89	1.5	ANNUAL	PAREA2		5
689162.05	4283901.6	0.10736	526.45	526.45	1.5	ANNUAL	PAREA2		5
689212.05	4283901.6	0.11822	528.48	528.48	1.5	ANNUAL	PAREA2		5
689262.05	4283901.6	0.13048	530.89	530.89	1.5	ANNUAL	PAREA2		5
689312.05	4283901.6	0.14542	533.73	533.73	1.5	ANNUAL	PAREA2		5
689362.05	4283901.6	0.16244	534.94	534.94	1.5	ANNUAL	PAREA2		5
689412.05	4283901.6	0.18327	535.89	550.67	1.5	ANNUAL	PAREA2		5
689062.05	4283951.6	0.08883	531.16	537.67	1.5	ANNUAL	PAREA2		5
689112.05	4283951.6	0.09912	528.46	528.46	1.5	ANNUAL	PAREA2		5
689162.05	4283951.6	0.11117	529.69	529.69	1.5	ANNUAL	PAREA2		5
689212.05	4283951.6	0.12323	530.6	530.6	1.5	ANNUAL	PAREA2		5
689262.05	4283951.6	0.13625	531.75	531.75	1.5	ANNUAL	PAREA2		5
689312.05	4283951.6	0.15122	533.24	533.24	1.5	ANNUAL	PAREA2		5

689362.05	4283951.6	0.16957	535.08	550.67	1.5	ANNUAL	PAREA2	5
689412.05	4283951.6	0.19296	536.97	552.43	1.5	ANNUAL	PAREA2	5
689062.05	4284001.6	0.08859	530.3	538.14	1.5	ANNUAL	PAREA2	5
689112.05	4284001.6	0.10037	529.81	529.81	1.5	ANNUAL	PAREA2	5
689162.05	4284001.6	0.11472	532.37	532.37	1.5	ANNUAL	PAREA2	5
689212.05	4284001.6	0.12925	533.97	533.97	1.5	ANNUAL	PAREA2	5
689262.05	4284001.6	0.14308	533.78	533.78	1.5	ANNUAL	PAREA2	5
689312.05	4284001.6	0.15857	533.99	562.89	1.5	ANNUAL	PAREA2	5
689362.05	4284001.6	0.17761	535.31	562.94	1.5	ANNUAL	PAREA2	5
689412.05	4284001.6	0.20362	537.89	562.94	1.5	ANNUAL	PAREA2	5
689062.05	4284051.6	0.08822	526.88	538.14	1.5	ANNUAL	PAREA2	5
689112.05	4284051.6	0.10089	529.56	532.13	1.5	ANNUAL	PAREA2	5
689162.05	4284051.6	0.11728	533.7	533.7	1.5	ANNUAL	PAREA2	5
689212.05	4284051.6	0.1354	536.64	536.64	1.5	ANNUAL	PAREA2	5
689262.05	4284051.6	0.15214	537.12	537.12	1.5	ANNUAL	PAREA2	5
689312.05	4284051.6	0.16848	536.45	562.94	1.5	ANNUAL	PAREA2	5
689362.05	4284051.6	0.18729	536.14	562.94	1.5	ANNUAL	PAREA2	5
689412.05	4284051.6	0.21827	539.65	562.94	1.5	ANNUAL	PAREA2	5
689112.05	4284101.6	0.10225	530.03	535.62	1.5	ANNUAL	PAREA2	5
689162.05	4284101.6	0.11862	533.6	533.6	1.5	ANNUAL	PAREA2	5
689212.05	4284101.6	0.13808	536.48	536.48	1.5	ANNUAL	PAREA2	5
689262.05	4284101.6	0.15999	538.78	538.78	1.5	ANNUAL	PAREA2	5
689312.05	4284101.6	0.17673	537.21	562.94	1.5	ANNUAL	PAREA2	5
689362.05	4284101.6	0.19654	536.19	562.94	1.5	ANNUAL	PAREA2	5
689412.05	4284101.6	0.24325	542.83	562.94	1.5	ANNUAL	PAREA2	5
689162.05	4284151.6	0.12239	535.82	535.82	1.5	ANNUAL	PAREA2	5
689212.05	4284151.6	0.13953	535.45	535.45	1.5	ANNUAL	PAREA2	5
689262.05	4284151.6	0.16216	537.46	562.94	1.5	ANNUAL	PAREA2	5
689312.05	4284151.6	0.18739	539	562.94	1.5	ANNUAL	PAREA2	5
689362.05	4284151.6	0.20754	537.02	562.94	1.5	ANNUAL	PAREA2	5
689412.05	4284151.6	0.2689	544.98	562.94	1.5	ANNUAL	PAREA2	5
689212.05	4284201.6	0.14469	537.24	537.24	1.5	ANNUAL	PAREA2	5
689262.05	4284201.6	0.16551	536.75	562.94	1.5	ANNUAL	PAREA2	5
689312.05	4284201.6	0.19362	538.69	562.94	1.5	ANNUAL	PAREA2	5
689362.05	4284201.6	0.25421	546.1	562.94	1.5	ANNUAL	PAREA2	5
689412.05	4284201.6	0.25754	551.74	562.94	1.5	ANNUAL	PAREA2	5
689262.05	4284251.6	0.17426	538.99	562.89	1.5	ANNUAL	PAREA2	5
689312.05	4284251.6	0.21343	542.56	562.94	1.5	ANNUAL	PAREA2	5
689062.05	4284301.6	0.12282	532.67	532.67	1.5	ANNUAL	PAREA2	5
689112.05	4284301.6	0.13218	536.78	536.78	1.5	ANNUAL	PAREA2	5
689162.05	4284301.6	0.14354	538.53	538.53	1.5	ANNUAL	PAREA2	5
689062.05	4284451.6	0.16844	531.02	536.85	1.5	ANNUAL	PAREA2	5
689062.05	4284501.6	0.18894	533.31	535.53	1.5	ANNUAL	PAREA2	5
689112.05	4284501.6	0.19658	532.5	532.5	1.5	ANNUAL	PAREA2	5
689062.05	4284551.6	0.21147	537.07	537.07	1.5	ANNUAL	PAREA2	5
689112.05	4284551.6	0.21984	534.33	534.33	1.5	ANNUAL	PAREA2	5
689162.05	4284551.6	0.23141	533.1	533.1	1.5	ANNUAL	PAREA2	5
689969.65	4283460.3	0.14967	507.01	538.72	1.5	ANNUAL	PAREA2	5
690019.65	4283460.3	0.1532	492.39	550.78	1.5	ANNUAL	PAREA2	5
690069.65	4283460.3	0.15855	484.49	551.4	1.5	ANNUAL	PAREA2	5
690119.65	4283460.3	0.16531	486.32	563.68	1.5	ANNUAL	PAREA2	5
690169.65	4283460.3	0.17228	490.92	563.68	1.5	ANNUAL	PAREA2	5
690219.65	4283460.3	0.17969	499.06	551.4	1.5	ANNUAL	PAREA2	5
689969.65	4283510.3	0.15834	497.46	550.78	1.5	ANNUAL	PAREA2	5
690019.65	4283510.3	0.16337	488.83	550.78	1.5	ANNUAL	PAREA2	5

690069.65	4283510.3	0.1713	495.55	550.47	1.5	ANNUAL	PAREA2	5
690119.65	4283510.3	0.17951	501.98	543.27	1.5	ANNUAL	PAREA2	5
690169.65	4283510.3	0.18692	504.5	550.47	1.5	ANNUAL	PAREA2	5
690219.65	4283510.3	0.19368	504.32	550.47	1.5	ANNUAL	PAREA2	5
689919.65	4283560.3	0.16424	500.59	550.78	1.5	ANNUAL	PAREA2	5
689969.65	4283560.3	0.16855	491.02	550.78	1.5	ANNUAL	PAREA2	5
690019.65	4283560.3	0.17772	505.09	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283560.3	0.18747	514.17	538.72	1.5	ANNUAL	PAREA2	5
690119.65	4283560.3	0.1965	518.23	538.72	1.5	ANNUAL	PAREA2	5
690169.65	4283560.3	0.20352	515.75	538.72	1.5	ANNUAL	PAREA2	5
690219.65	4283560.3	0.20917	508.35	550.47	1.5	ANNUAL	PAREA2	5
689919.65	4283610.3	0.17553	498.55	550.78	1.5	ANNUAL	PAREA2	5
689969.65	4283610.3	0.18169	496.27	550.78	1.5	ANNUAL	PAREA2	5
690019.65	4283610.3	0.19275	512.4	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283610.3	0.20567	525.28	538.72	1.5	ANNUAL	PAREA2	5
690119.65	4283610.3	0.21665	528.65	538.51	1.5	ANNUAL	PAREA2	5
690169.65	4283610.3	0.2206	519.44	538.72	1.5	ANNUAL	PAREA2	5
690219.65	4283610.3	0.22431	503.1	551.4	1.5	ANNUAL	PAREA2	5
689919.65	4283660.3	0.18874	499.92	550.78	1.5	ANNUAL	PAREA2	5
689969.65	4283660.3	0.19715	504.28	538.82	1.5	ANNUAL	PAREA2	5
690019.65	4283660.3	0.21064	521.19	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283660.3	0.23019	533.88	538.72	1.5	ANNUAL	PAREA2	5
690119.65	4283660.3	0.2338	528.27	538.72	1.5	ANNUAL	PAREA2	5
690169.65	4283660.3	0.23712	515.1	538.72	1.5	ANNUAL	PAREA2	5
690219.65	4283660.3	0.24013	493.19	577.58	1.5	ANNUAL	PAREA2	5
689869.65	4283710.3	0.20275	523.96	527.99	1.5	ANNUAL	PAREA2	5
689919.65	4283710.3	0.20368	501.37	552.14	1.5	ANNUAL	PAREA2	5
689969.65	4283710.3	0.21352	506.06	539.3	1.5	ANNUAL	PAREA2	5
690019.65	4283710.3	0.23136	527.62	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283710.3	0.25024	534.47	538.72	1.5	ANNUAL	PAREA2	5
690119.65	4283710.3	0.25046	523.3	538.72	1.5	ANNUAL	PAREA2	5
690169.65	4283710.3	0.25463	506.65	550.47	1.5	ANNUAL	PAREA2	5
690219.65	4283710.3	0.25912	489.26	602.25	1.5	ANNUAL	PAREA2	5
689919.65	4283760.3	0.21977	498.71	562.94	1.5	ANNUAL	PAREA2	5
689969.65	4283760.3	0.2323	508.33	552.12	1.5	ANNUAL	PAREA2	5
690019.65	4283760.3	0.25058	526.17	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283760.3	0.26431	528.49	538.72	1.5	ANNUAL	PAREA2	5
690119.65	4283760.3	0.27019	517.84	538.72	1.5	ANNUAL	PAREA2	5
690169.65	4283760.3	0.27752	508.22	552.14	1.5	ANNUAL	PAREA2	5
690219.65	4283760.3	0.28641	507.28	552.14	1.5	ANNUAL	PAREA2	5
689919.65	4283810.3	0.23909	500.38	562.94	1.5	ANNUAL	PAREA2	5
689969.65	4283810.3	0.25342	509.18	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4283810.3	0.27352	526.12	538.72	1.5	ANNUAL	PAREA2	5
690069.65	4283810.3	0.29088	530.76	530.76	1.5	ANNUAL	PAREA2	5
690119.65	4283810.3	0.29947	525.93	531.2	1.5	ANNUAL	PAREA2	5
690169.65	4283810.3	0.31068	525.2	525.2	1.5	ANNUAL	PAREA2	5
690219.65	4283810.3	0.31816	522.63	527.67	1.5	ANNUAL	PAREA2	5
689919.65	4283860.3	0.26081	500.23	563.99	1.5	ANNUAL	PAREA2	5
689969.65	4283860.3	0.27806	511.01	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4283860.3	0.30018	526.53	526.53	1.5	ANNUAL	PAREA2	5
690069.65	4283860.3	0.31856	530.48	530.48	1.5	ANNUAL	PAREA2	5
690119.65	4283860.3	0.33043	528.36	528.36	1.5	ANNUAL	PAREA2	5
690169.65	4283860.3	0.34265	528.39	528.39	1.5	ANNUAL	PAREA2	5
690219.65	4283860.3	0.3471	523.99	530.72	1.5	ANNUAL	PAREA2	5
689919.65	4283910.3	0.28754	505.05	562.94	1.5	ANNUAL	PAREA2	5

689969.65	4283910.3	0.30696	513.65	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4283910.3	0.32856	523.37	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4283910.3	0.35003	529.8	529.8	1.5	ANNUAL	PAREA2	5
690119.65	4283910.3	0.36757	531.52	531.52	1.5	ANNUAL	PAREA2	5
690169.65	4283910.3	0.37879	530.94	530.94	1.5	ANNUAL	PAREA2	5
690219.65	4283910.3	0.38098	527.58	527.58	1.5	ANNUAL	PAREA2	5
689919.65	4283960.3	0.31933	510.72	562.94	1.5	ANNUAL	PAREA2	5
689969.65	4283960.3	0.34326	521.03	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4283960.3	0.36716	527.86	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4283960.3	0.38958	531.46	550.99	1.5	ANNUAL	PAREA2	5
690119.65	4283960.3	0.41318	534.98	534.98	1.5	ANNUAL	PAREA2	5
690169.65	4283960.3	0.41902	532.81	537.82	1.5	ANNUAL	PAREA2	5
690219.65	4283960.3	0.41202	525.19	552.14	1.5	ANNUAL	PAREA2	5
689919.65	4284010.3	0.35531	512.8	562.94	1.5	ANNUAL	PAREA2	5
689969.65	4284010.3	0.38265	522.22	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4284010.3	0.41051	529.6	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4284010.3	0.43948	534.57	552.12	1.5	ANNUAL	PAREA2	5
690119.65	4284010.3	0.46844	537.97	537.97	1.5	ANNUAL	PAREA2	5
690169.65	4284010.3	0.46358	534.28	551.55	1.5	ANNUAL	PAREA2	5
690219.65	4284010.3	0.44682	524.43	564.77	1.5	ANNUAL	PAREA2	5
689919.65	4284060.3	0.39986	517.74	562.94	1.5	ANNUAL	PAREA2	5
689969.65	4284060.3	0.43014	524.5	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4284060.3	0.46551	533.27	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4284060.3	0.50662	538.63	552.14	1.5	ANNUAL	PAREA2	5
690119.65	4284060.3	0.53282	540.3	552.12	1.5	ANNUAL	PAREA2	5
690169.65	4284060.3	0.50867	534.39	552.14	1.5	ANNUAL	PAREA2	5
690219.65	4284060.3	0.49462	531.98	564.22	1.5	ANNUAL	PAREA2	5
689969.65	4284110.3	0.49521	532.66	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4284110.3	0.55347	540.2	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4284110.3	0.61589	545.03	552	1.5	ANNUAL	PAREA2	5
690119.65	4284110.3	0.6194	543.76	552.14	1.5	ANNUAL	PAREA2	5
690169.65	4284110.3	0.56948	537.37	552.14	1.5	ANNUAL	PAREA2	5
690219.65	4284110.3	0.56328	539.23	551.07	1.5	ANNUAL	PAREA2	5
689969.65	4284160.3	0.58563	539	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4284160.3	0.67729	546.12	551.38	1.5	ANNUAL	PAREA2	5
690069.65	4284160.3	0.69168	551.03	551.03	1.5	ANNUAL	PAREA2	5
690119.65	4284160.3	0.70027	550.52	550.52	1.5	ANNUAL	PAREA2	5
690169.65	4284160.3	0.68791	545.48	551.96	1.5	ANNUAL	PAREA2	5
690219.65	4284160.3	0.60209	539.66	564.42	1.5	ANNUAL	PAREA2	5
689919.65	4284210.3	0.60056	530.87	552.14	1.5	ANNUAL	PAREA2	5
689969.65	4284210.3	0.67595	539.95	552.08	1.5	ANNUAL	PAREA2	5
690019.65	4284210.3	0.77094	545.98	551.35	1.5	ANNUAL	PAREA2	5
690069.65	4284210.3	0.78244	550.41	550.41	1.5	ANNUAL	PAREA2	5
690119.65	4284210.3	0.77764	549.97	549.97	1.5	ANNUAL	PAREA2	5
690169.65	4284210.3	0.75012	547.83	549.53	1.5	ANNUAL	PAREA2	5
690219.65	4284210.3	0.67975	544.9	564.22	1.5	ANNUAL	PAREA2	5
689869.65	4284260.3	0.62819	520.14	562.94	1.5	ANNUAL	PAREA2	5
689919.65	4284260.3	0.68307	524.4	552.14	1.5	ANNUAL	PAREA2	5
689969.65	4284260.3	0.7587	537.15	552.14	1.5	ANNUAL	PAREA2	5
690019.65	4284260.3	0.82733	541.61	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4284260.3	0.87169	544.61	551.67	1.5	ANNUAL	PAREA2	5
690119.65	4284260.3	0.86043	546.11	546.11	1.5	ANNUAL	PAREA2	5
690169.65	4284260.3	0.79959	546.3	563.68	1.5	ANNUAL	PAREA2	5
690219.65	4284260.3	0.71729	547.85	564.32	1.5	ANNUAL	PAREA2	5
689919.65	4284310.3	0.79541	523.32	563.68	1.5	ANNUAL	PAREA2	5

689969.65	4284310.3	0.85397	529.44	562.73	1.5	ANNUAL	PAREA2	5
690019.65	4284310.3	0.89607	536.25	552.14	1.5	ANNUAL	PAREA2	5
690069.65	4284310.3	0.89195	538.25	563.68	1.5	ANNUAL	PAREA2	5
690119.65	4284310.3	0.86851	541.32	564.25	1.5	ANNUAL	PAREA2	5
690169.65	4284310.3	0.83271	545.48	564.32	1.5	ANNUAL	PAREA2	5
690219.65	4284310.3	0.73592	549.16	564.35	1.5	ANNUAL	PAREA2	5
689919.65	4284360.3	0.9499	527.45	552.14	1.5	ANNUAL	PAREA2	5
689969.65	4284360.3	0.99578	528.54	563.78	1.5	ANNUAL	PAREA2	5
690019.65	4284360.3	1.00717	532.77	564.06	1.5	ANNUAL	PAREA2	5
690069.65	4284360.3	0.96693	535.72	564.32	1.5	ANNUAL	PAREA2	5
690119.65	4284360.3	0.90611	539.82	564.35	1.5	ANNUAL	PAREA2	5
690169.65	4284360.3	0.86383	545.24	564.32	1.5	ANNUAL	PAREA2	5
690219.65	4284360.3	0.75967	548.82	564.41	1.5	ANNUAL	PAREA2	5
689919.65	4284410.3	1.13402	527.07	527.07	1.5	ANNUAL	PAREA2	5
689969.65	4284410.3	1.15856	526.11	602.25	1.5	ANNUAL	PAREA2	5
690019.65	4284410.3	1.15446	535.45	535.63	1.5	ANNUAL	PAREA2	5
690069.65	4284410.3	1.06708	537.95	563.78	1.5	ANNUAL	PAREA2	5
690119.65	4284410.3	0.96055	540.49	564.32	1.5	ANNUAL	PAREA2	5
690169.65	4284410.3	0.898	545.4	564.32	1.5	ANNUAL	PAREA2	5
690219.65	4284410.3	0.78498	548.47	601.86	1.5	ANNUAL	PAREA2	5
689919.65	4284460.3	1.35729	524.64	602.25	1.5	ANNUAL	PAREA2	5
689969.65	4284460.3	1.36579	529.09	602.25	1.5	ANNUAL	PAREA2	5
690019.65	4284460.3	1.28568	535.26	537.89	1.5	ANNUAL	PAREA2	5
690069.65	4284460.3	1.15581	539.45	539.45	1.5	ANNUAL	PAREA2	5
690119.65	4284460.3	1.02841	542.19	602.25	1.5	ANNUAL	PAREA2	5
690169.65	4284460.3	0.94548	547.11	602.25	1.5	ANNUAL	PAREA2	5
690219.65	4284460.3	0.78959	551.32	602.25	1.5	ANNUAL	PAREA2	5
689243.81	4283030.6	0.07898	530.88	530.88	1.5	ANNUAL	PAREA2	5
689293.81	4283030.6	0.08416	529.46	529.46	1.5	ANNUAL	PAREA2	5
689343.81	4283030.6	0.08754	525.17	536.56	1.5	ANNUAL	PAREA2	5
689393.81	4283030.6	0.09086	525.12	525.12	1.5	ANNUAL	PAREA2	5
689443.81	4283030.6	0.0927	524.98	524.98	1.5	ANNUAL	PAREA2	5
689493.81	4283030.6	0.09343	524.32	524.32	1.5	ANNUAL	PAREA2	5
689543.81	4283030.6	0.09427	525.16	525.16	1.5	ANNUAL	PAREA2	5
689243.81	4283080.6	0.08074	531.25	531.25	1.5	ANNUAL	PAREA2	5
689293.81	4283080.6	0.08606	529.07	537.17	1.5	ANNUAL	PAREA2	5
689343.81	4283080.6	0.09096	527.74	537.55	1.5	ANNUAL	PAREA2	5
689393.81	4283080.6	0.09447	526.5	537.55	1.5	ANNUAL	PAREA2	5
689443.81	4283080.6	0.0967	526.2	527.36	1.5	ANNUAL	PAREA2	5
689493.81	4283080.6	0.09799	526.65	526.65	1.5	ANNUAL	PAREA2	5
689543.81	4283080.6	0.09849	526.02	526.02	1.5	ANNUAL	PAREA2	5
689243.81	4283130.6	0.08475	534.77	534.77	1.5	ANNUAL	PAREA2	5
689293.81	4283130.6	0.09263	535.63	535.63	1.5	ANNUAL	PAREA2	5
689343.81	4283130.6	0.09737	534.08	537.42	1.5	ANNUAL	PAREA2	5
689393.81	4283130.6	0.10015	531.63	531.63	1.5	ANNUAL	PAREA2	5
689443.81	4283130.6	0.10166	529.14	529.14	1.5	ANNUAL	PAREA2	5
689493.81	4283130.6	0.10258	527.9	527.9	1.5	ANNUAL	PAREA2	5
689543.81	4283130.6	0.10277	526.15	526.15	1.5	ANNUAL	PAREA2	5
689243.81	4283180.6	0.08757	536.01	536.01	1.5	ANNUAL	PAREA2	5
689293.81	4283180.6	0.09649	537.11	537.11	1.5	ANNUAL	PAREA2	5
689343.81	4283180.6	0.10376	537.22	537.22	1.5	ANNUAL	PAREA2	5
689393.81	4283180.6	0.10584	534.34	534.34	1.5	ANNUAL	PAREA2	5
689443.81	4283180.6	0.10693	531.36	531.36	1.5	ANNUAL	PAREA2	5
689493.81	4283180.6	0.10762	529.32	529.32	1.5	ANNUAL	PAREA2	5
689543.81	4283180.6	0.10771	527.27	527.27	1.5	ANNUAL	PAREA2	5

689243.81	4283230.6	0.0891	535.82	535.82	1.5	ANNUAL	PAREA2	5
689293.81	4283230.6	0.09895	537.32	537.32	1.5	ANNUAL	PAREA2	5
689343.81	4283230.6	0.10655	537.15	537.15	1.5	ANNUAL	PAREA2	5
689393.81	4283230.6	0.10972	534.6	534.6	1.5	ANNUAL	PAREA2	5
689443.81	4283230.6	0.11159	531.93	531.93	1.5	ANNUAL	PAREA2	5
689243.81	4283280.6	0.0906	535.51	535.51	1.5	ANNUAL	PAREA2	5
689293.81	4283280.6	0.10068	536.93	536.93	1.5	ANNUAL	PAREA2	5
689343.81	4283280.6	0.10812	536.13	536.13	1.5	ANNUAL	PAREA2	5
689393.81	4283280.6	0.11278	533.93	533.93	1.5	ANNUAL	PAREA2	5
689443.81	4283280.6	0.11562	531.24	531.24	1.5	ANNUAL	PAREA2	5
689243.81	4283330.6	0.09149	534.37	534.37	1.5	ANNUAL	PAREA2	5
689293.81	4283330.6	0.10054	534.76	534.76	1.5	ANNUAL	PAREA2	5
689343.81	4283330.6	0.10824	533.41	533.41	1.5	ANNUAL	PAREA2	5
689393.81	4283330.6	0.11501	531.98	531.98	1.5	ANNUAL	PAREA2	5
689443.81	4283330.6	0.12063	531.69	531.69	1.5	ANNUAL	PAREA2	5
689493.81	4283330.6	0.12302	529.94	529.94	1.5	ANNUAL	PAREA2	5
689243.81	4283380.6	0.09298	533.68	533.68	1.5	ANNUAL	PAREA2	5
689293.81	4283380.6	0.1025	534.32	534.32	1.5	ANNUAL	PAREA2	5
689343.81	4283380.6	0.11278	535	535	1.5	ANNUAL	PAREA2	5
689393.81	4283380.6	0.12139	534.7	535.45	1.5	ANNUAL	PAREA2	5
689443.81	4283380.6	0.12837	534.75	535.85	1.5	ANNUAL	PAREA2	5
689243.81	4283430.6	0.09492	533.36	533.36	1.5	ANNUAL	PAREA2	5
689293.81	4283430.6	0.10493	534.26	534.26	1.5	ANNUAL	PAREA2	5
689343.81	4283430.6	0.1162	535.27	535.27	1.5	ANNUAL	PAREA2	5
689393.81	4283430.6	0.12733	536.17	536.17	1.5	ANNUAL	PAREA2	5
689443.81	4283430.6	0.13727	537.27	537.27	1.5	ANNUAL	PAREA2	5
689243.81	4283480.6	0.09708	533.09	533.09	1.5	ANNUAL	PAREA2	5
689293.81	4283480.6	0.10751	534.21	534.21	1.5	ANNUAL	PAREA2	5
689343.81	4283480.6	0.11904	534.93	534.93	1.5	ANNUAL	PAREA2	5
689393.81	4283480.6	0.1314	536.06	550.7	1.5	ANNUAL	PAREA2	5
689443.81	4283480.6	0.14346	537.64	550.76	1.5	ANNUAL	PAREA2	5
689493.81	4283480.6	0.15464	539.69	550.7	1.5	ANNUAL	PAREA2	5
689584.29	4283182	0.10803	525.58	525.58	1.5	ANNUAL	PAREA2	5
689626.46	4283180.8	0.10751	519.89	527.35	1.5	ANNUAL	PAREA2	5
689581.46	4283081.8	0.09834	522.81	525.66	1.5	ANNUAL	PAREA2	5
689586.89	4283032.1	0.09398	520.25	525.64	1.5	ANNUAL	PAREA2	5
689628.89	4283033.2	0.09411	514.93	526.85	1.5	ANNUAL	PAREA2	5
690123.39	4283039.1	0.10209	502.42	515.39	1.5	ANNUAL	PAREA2	5
690123.39	4283089.1	0.10779	504.85	515.62	1.5	ANNUAL	PAREA2	5
690173.39	4283089.1	0.11266	513.46	513.61	1.5	ANNUAL	PAREA2	5
689923.39	4283139.1	0.10438	519.16	519.16	1.5	ANNUAL	PAREA2	5
689950.32	4283366.6	0.13467	521.49	529.62	1.5	ANNUAL	PAREA2	5
690000.32	4283366.6	0.13999	525.34	525.34	1.5	ANNUAL	PAREA2	5
689946.72	4283397.8	0.13962	522.25	529.64	1.5	ANNUAL	PAREA2	5
689990.74	4283392	0.14308	524.47	526.53	1.5	ANNUAL	PAREA2	5
690047.5	4284607.9	1.42284	537.17	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284607.9	1.15219	537.61	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284607.9	0.95612	539.87	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284607.9	0.86129	544.63	603.34	1.5	ANNUAL	PAREA2	5
690047.5	4284657.9	1.43226	534.61	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284657.9	1.13325	535.78	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284657.9	0.91784	538.41	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284657.9	0.82627	544.27	603.34	1.5	ANNUAL	PAREA2	5
689997.5	4284707.9	1.84796	533.29	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284707.9	1.09354	535.32	603.34	1.5	ANNUAL	PAREA2	5

690147.5	4284707.9	0.87041	537.81	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284707.9	0.76057	543.18	603.34	1.5	ANNUAL	PAREA2	5
690047.5	4284757.9	1.35801	535.23	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284757.9	1.03301	536.4	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284757.9	0.80515	536.99	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284757.9	0.67198	541.31	603.34	1.5	ANNUAL	PAREA2	5
689947.5	4284807.9	2.49983	536.71	536.71	1.5	ANNUAL	PAREA2	5
690047.5	4284807.9	1.26873	535.92	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284807.9	0.95432	537.61	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284807.9	0.73553	537.73	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284807.9	0.5933	539.99	603.34	1.5	ANNUAL	PAREA2	5
689897.5	4284857.9	3.72949	536.76	536.76	1.5	ANNUAL	PAREA2	5
689947.5	4284857.9	2.45781	537.24	537.24	1.5	ANNUAL	PAREA2	5
689997.5	4284857.9	1.65878	536.94	536.94	1.5	ANNUAL	PAREA2	5
690047.5	4284857.9	1.16847	536.64	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284857.9	0.86919	538.34	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284857.9	0.674	540.07	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284857.9	0.54322	541.59	603.34	1.5	ANNUAL	PAREA2	5
690247.5	4284857.9	0.47295	544.85	603.34	1.5	ANNUAL	PAREA2	5
689847.5	4284907.9	6.58118	538.64	538.64	1.5	ANNUAL	PAREA2	5
689897.5	4284907.9	3.82946	537.77	537.77	1.5	ANNUAL	PAREA2	5
689947.5	4284907.9	2.35832	537.08	537.08	1.5	ANNUAL	PAREA2	5
689997.5	4284907.9	1.53477	537.13	537.13	1.5	ANNUAL	PAREA2	5
690047.5	4284907.9	1.067	537.74	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284907.9	0.7812	538.55	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284907.9	0.60664	540.93	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284907.9	0.4918	542.51	603.34	1.5	ANNUAL	PAREA2	5
690247.5	4284907.9	0.41786	544.49	603.34	1.5	ANNUAL	PAREA2	5
689797.5	4284957.9	13.10279	539.55	539.55	1.5	ANNUAL	PAREA2	5
689847.5	4284957.9	6.99986	540.19	540.19	1.5	ANNUAL	PAREA2	5
689897.5	4284957.9	3.86502	539.27	539.27	1.5	ANNUAL	PAREA2	5
689947.5	4284957.9	2.19647	537.89	537.89	1.5	ANNUAL	PAREA2	5
689997.5	4284957.9	1.38657	537.13	537.13	1.5	ANNUAL	PAREA2	5
690047.5	4284957.9	0.95582	537.72	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4284957.9	0.70221	539.34	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4284957.9	0.54399	540.89	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4284957.9	0.44122	542.29	603.34	1.5	ANNUAL	PAREA2	5
690247.5	4284957.9	0.37545	544.24	603.34	1.5	ANNUAL	PAREA2	5
689897.5	4285007.9	3.65127	539.86	539.86	1.5	ANNUAL	PAREA2	5
689947.5	4285007.9	1.9388	537.26	537.26	1.5	ANNUAL	PAREA2	5
689997.5	4285007.9	1.23252	537.14	537.14	1.5	ANNUAL	PAREA2	5
690047.5	4285007.9	0.85937	537.14	603.34	1.5	ANNUAL	PAREA2	5
690097.5	4285007.9	0.63815	537.99	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4285007.9	0.49819	539.94	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4285007.9	0.40685	541.95	603.34	1.5	ANNUAL	PAREA2	5
690247.5	4285007.9	0.34742	544.25	603.34	1.5	ANNUAL	PAREA2	5
689897.5	4285057.9	3.22771	541.78	547.75	1.5	ANNUAL	PAREA2	5
689947.5	4285057.9	1.79623	539.62	562.37	1.5	ANNUAL	PAREA2	5
689997.5	4285057.9	1.15643	537.63	562.37	1.5	ANNUAL	PAREA2	5
690047.5	4285057.9	0.81642	537.14	589.12	1.5	ANNUAL	PAREA2	5
690097.5	4285057.9	0.61012	537.19	603.34	1.5	ANNUAL	PAREA2	5
690147.5	4285057.9	0.47874	539.16	603.34	1.5	ANNUAL	PAREA2	5
690197.5	4285057.9	0.39267	541.58	603.34	1.5	ANNUAL	PAREA2	5
690247.5	4285057.9	0.33539	544.06	603.34	1.5	ANNUAL	PAREA2	5
689970.15	4284514.1	1.6268	535.22	537.9	1.5	ANNUAL	PAREA2	5

690020.15	4284514.1	1.43611	538.37	538.37	1.5	ANNUAL	PAREA2	5
690070.15	4284514.1	1.23163	540.11	602.25	1.5	ANNUAL	PAREA2	5
690120.15	4284514.1	1.0815	542.8	603.34	1.5	ANNUAL	PAREA2	5
690170.15	4284514.1	0.97743	547.04	603.34	1.5	ANNUAL	PAREA2	5
690220.15	4284514.1	0.81125	550.47	603.34	1.5	ANNUAL	PAREA2	5
690020.15	4284564.1	1.54025	538.57	538.57	1.5	ANNUAL	PAREA2	5
690070.15	4284564.1	1.28891	540.15	603.34	1.5	ANNUAL	PAREA2	5
690120.15	4284564.1	1.07507	540.79	603.34	1.5	ANNUAL	PAREA2	5
690170.15	4284564.1	0.95459	544.31	603.34	1.5	ANNUAL	PAREA2	5
690220.15	4284564.1	0.83251	547.27	603.34	1.5	ANNUAL	PAREA2	5
689216.55	4284759	0.35525	535.39	535.39	1.5	ANNUAL	PAREA2	5
689266.55	4284759	0.40503	537.06	537.06	1.5	ANNUAL	PAREA2	5
689316.55	4284759	0.46183	536.91	536.91	1.5	ANNUAL	PAREA2	5
689366.55	4284759	0.53773	535.98	535.98	1.5	ANNUAL	PAREA2	5
689416.55	4284759	0.64351	536.01	536.01	1.5	ANNUAL	PAREA2	5
689466.55	4284759	0.80077	536.56	536.56	1.5	ANNUAL	PAREA2	5
689516.55	4284759	1.03865	537.28	537.28	1.5	ANNUAL	PAREA2	5
689216.55	4284809	0.37069	535.86	535.86	1.5	ANNUAL	PAREA2	5
689266.55	4284809	0.43194	537.23	537.23	1.5	ANNUAL	PAREA2	5
689316.55	4284809	0.50108	537.23	537.23	1.5	ANNUAL	PAREA2	5
689366.55	4284809	0.5903	536.51	536.51	1.5	ANNUAL	PAREA2	5
689416.55	4284809	0.72221	536.17	536.17	1.5	ANNUAL	PAREA2	5
689566.55	4284809	1.72164	538.51	538.51	1.5	ANNUAL	PAREA2	5
689216.55	4284859	0.37262	536.46	536.46	1.5	ANNUAL	PAREA2	5
689266.55	4284859	0.44276	536.42	536.42	1.5	ANNUAL	PAREA2	5
689316.55	4284859	0.53195	537.1	537.1	1.5	ANNUAL	PAREA2	5
689366.55	4284859	0.64323	537.27	537.27	1.5	ANNUAL	PAREA2	5
689466.55	4284859	1.07005	537.37	537.37	1.5	ANNUAL	PAREA2	5
689516.55	4284859	1.52684	538.75	538.75	1.5	ANNUAL	PAREA2	5
689566.55	4284859	2.25809	539.75	539.75	1.5	ANNUAL	PAREA2	5
689666.55	4284859	5.336	538.58	538.58	1.5	ANNUAL	PAREA2	5
689266.55	4284909	0.43261	536.38	536.38	1.5	ANNUAL	PAREA2	5
689316.55	4284909	0.53675	536.86	536.86	1.5	ANNUAL	PAREA2	5
689366.55	4284909	0.67814	537.48	537.48	1.5	ANNUAL	PAREA2	5
689416.55	4284909	0.8782	537.67	537.67	1.5	ANNUAL	PAREA2	5
689466.55	4284909	1.22733	537.65	537.65	1.5	ANNUAL	PAREA2	5
689616.55	4284909	4.69499	540.33	540.33	1.5	ANNUAL	PAREA2	5
689216.55	4284959	0.33182	537.22	549.49	1.5	ANNUAL	PAREA2	5
689366.55	4284959	0.67041	537.23	537.23	1.5	ANNUAL	PAREA2	5
689416.55	4284959	0.91962	537.26	537.26	1.5	ANNUAL	PAREA2	5
689466.55	4284959	1.42022	539.97	539.97	1.5	ANNUAL	PAREA2	5
689516.55	4284959	2.96137	540.7	540.7	1.5	ANNUAL	PAREA2	5
689566.55	4284959	4.98685	540.97	540.97	1.5	ANNUAL	PAREA2	5
689616.55	4284959	6.86951	541.19	541.19	1.5	ANNUAL	PAREA2	5
689216.55	4285009	0.33764	539.29	539.29	1.5	ANNUAL	PAREA2	5
689366.55	4285009	0.6454	538.57	538.57	1.5	ANNUAL	PAREA2	5
689416.55	4285009	0.88315	538.22	548.48	1.5	ANNUAL	PAREA2	5
689566.55	4285009	6.50572	542.84	542.84	1.5	ANNUAL	PAREA2	5
689712.61	4284806.3	6.2836	537.24	537.24	1.5	ANNUAL	PAREA2	5
689665.5	4284822.9	4.03835	537.58	537.58	1.5	ANNUAL	PAREA2	5
689153.77	4285125.1	0.38944	546.88	546.88	1.5	ANNUAL	PAREA2	5
689203.77	4285125.1	0.45991	547.16	547.16	1.5	ANNUAL	PAREA2	5
689303.77	4285125.1	0.68295	546.19	546.19	1.5	ANNUAL	PAREA2	5
689353.77	4285125.1	0.87517	545.84	545.84	1.5	ANNUAL	PAREA2	5
689603.77	4285125.1	8.91359	546.36	546.36	1.5	ANNUAL	PAREA2	5

689653.77	4285125.1	11.73884	546.88	546.88	1.5	ANNUAL	PAREA2	5
689703.77	4285125.1	15.42403	548.13	548.13	1.5	ANNUAL	PAREA2	5
689803.77	4285125.1	15.40201	546.79	546.79	1.5	ANNUAL	PAREA2	5
689853.77	4285125.1	7.71166	547.33	547.33	1.5	ANNUAL	PAREA2	5
689903.77	4285125.1	3.26582	548.27	548.27	1.5	ANNUAL	PAREA2	5
689953.77	4285125.1	1.9349	546.64	562.17	1.5	ANNUAL	PAREA2	5
690003.77	4285125.1	1.21172	543.82	562.55	1.5	ANNUAL	PAREA2	5
690103.77	4285125.1	0.61719	539.54	589.12	1.5	ANNUAL	PAREA2	5
689153.77	4285175.1	0.41441	547.57	547.57	1.5	ANNUAL	PAREA2	5
689203.77	4285175.1	0.48594	549.41	549.41	1.5	ANNUAL	PAREA2	5
689303.77	4285175.1	0.74526	547.49	547.49	1.5	ANNUAL	PAREA2	5
689353.77	4285175.1	0.96854	546.38	546.38	1.5	ANNUAL	PAREA2	5
689603.77	4285175.1	6.44946	547.53	547.53	1.5	ANNUAL	PAREA2	5
689653.77	4285175.1	8.20567	548.26	548.26	1.5	ANNUAL	PAREA2	5
689703.77	4285175.1	10.60803	549.55	549.55	1.5	ANNUAL	PAREA2	5
689753.77	4285175.1	12.81715	549.68	561.21	1.5	ANNUAL	PAREA2	5
689803.77	4285175.1	9.73143	547.91	561.96	1.5	ANNUAL	PAREA2	5
689853.77	4285175.1	5.84345	549	562.37	1.5	ANNUAL	PAREA2	5
689903.77	4285175.1	2.8627	551.59	562.17	1.5	ANNUAL	PAREA2	5
689953.77	4285175.1	1.88622	550.86	562.37	1.5	ANNUAL	PAREA2	5
690003.77	4285175.1	1.3268	547.4	563.2	1.5	ANNUAL	PAREA2	5
689153.77	4285225.1	0.43487	548.23	548.23	1.5	ANNUAL	PAREA2	5
689203.77	4285225.1	0.5035	549.82	549.82	1.5	ANNUAL	PAREA2	5
689253.77	4285225.1	0.60721	549.75	549.75	1.5	ANNUAL	PAREA2	5
689303.77	4285225.1	0.76671	548.54	548.54	1.5	ANNUAL	PAREA2	5
689353.77	4285225.1	1.00548	546.86	546.86	1.5	ANNUAL	PAREA2	5
689403.77	4285225.1	1.3648	547.47	547.47	1.5	ANNUAL	PAREA2	5
689453.77	4285225.1	1.94401	547.58	547.58	1.5	ANNUAL	PAREA2	5
689503.77	4285225.1	2.80476	546.85	546.85	1.5	ANNUAL	PAREA2	5
689553.77	4285225.1	3.80899	548.05	548.05	1.5	ANNUAL	PAREA2	5
689603.77	4285225.1	4.8744	549.25	549.25	1.5	ANNUAL	PAREA2	5
689653.77	4285225.1	6.02541	550.38	562.2	1.5	ANNUAL	PAREA2	5
689703.77	4285225.1	6.8675	552.04	562.2	1.5	ANNUAL	PAREA2	5
689753.77	4285225.1	7.27733	552.5	562.19	1.5	ANNUAL	PAREA2	5
689803.77	4285225.1	6.53553	550.34	562.19	1.5	ANNUAL	PAREA2	5
689853.77	4285225.1	4.19699	551.71	562.37	1.5	ANNUAL	PAREA2	5
689903.77	4285225.1	2.27377	556.17	562.28	1.5	ANNUAL	PAREA2	5
689953.77	4285225.1	1.55786	554.54	562.37	1.5	ANNUAL	PAREA2	5
690003.77	4285225.1	1.29421	550	563.77	1.5	ANNUAL	PAREA2	5
690053.77	4285225.1	0.83061	553.16	562.98	1.5	ANNUAL	PAREA2	5
689153.77	4285275.1	0.43599	549.46	549.46	1.5	ANNUAL	PAREA2	5
689203.77	4285275.1	0.50748	550.54	550.54	1.5	ANNUAL	PAREA2	5
689253.77	4285275.1	0.62388	549.45	549.45	1.5	ANNUAL	PAREA2	5
689303.77	4285275.1	0.77702	549.07	549.07	1.5	ANNUAL	PAREA2	5
689353.77	4285275.1	0.99264	548.34	548.34	1.5	ANNUAL	PAREA2	5
689403.77	4285275.1	1.30369	547.84	547.84	1.5	ANNUAL	PAREA2	5
689453.77	4285275.1	1.75357	547.81	547.81	1.5	ANNUAL	PAREA2	5
689503.77	4285275.1	2.36668	547.96	547.96	1.5	ANNUAL	PAREA2	5
689553.77	4285275.1	3.06905	549.32	549.32	1.5	ANNUAL	PAREA2	5
689603.77	4285275.1	3.57555	551.84	551.84	1.5	ANNUAL	PAREA2	5
689653.77	4285275.1	4.1225	554.37	561.65	1.5	ANNUAL	PAREA2	5
689703.77	4285275.1	4.29918	558.02	561.95	1.5	ANNUAL	PAREA2	5
689753.77	4285275.1	4.27425	558.83	561.96	1.5	ANNUAL	PAREA2	5
689803.77	4285275.1	3.97925	556.02	559.45	1.5	ANNUAL	PAREA2	5
689853.77	4285275.1	2.77319	558.28	558.28	1.5	ANNUAL	PAREA2	5

689903.77	4285275.1	1.75184	561.62	561.62	1.5	ANNUAL	PAREA2	5
689953.77	4285275.1	1.20624	561.18	561.18	1.5	ANNUAL	PAREA2	5
690003.77	4285275.1	0.91731	558.72	558.72	1.5	ANNUAL	PAREA2	5
690053.77	4285275.1	0.63062	561.16	561.16	1.5	ANNUAL	PAREA2	5
689153.77	4285325.1	0.43394	550.87	550.87	1.5	ANNUAL	PAREA2	5
689203.77	4285325.1	0.45567	551.71	551.71	1.5	ANNUAL	PAREA2	5
689253.77	4285325.1	0.62279	550.44	550.44	1.5	ANNUAL	PAREA2	5
689303.77	4285325.1	0.75944	550.06	550.06	1.5	ANNUAL	PAREA2	5
689353.77	4285325.1	0.94308	549.72	549.72	1.5	ANNUAL	PAREA2	5
689403.77	4285325.1	1.20472	549.19	549.19	1.5	ANNUAL	PAREA2	5
689453.77	4285325.1	1.5608	549.25	549.25	1.5	ANNUAL	PAREA2	5
689503.77	4285325.1	2.02789	549.02	549.02	1.5	ANNUAL	PAREA2	5
689553.77	4285325.1	2.51801	550.74	550.74	1.5	ANNUAL	PAREA2	5
689603.77	4285325.1	2.76928	554.08	554.08	1.5	ANNUAL	PAREA2	5
689653.77	4285325.1	3.00199	557.81	557.81	1.5	ANNUAL	PAREA2	5
689703.77	4285325.1	3.07865	561.6	561.6	1.5	ANNUAL	PAREA2	5
689753.77	4285325.1	3.07802	561.32	561.32	1.5	ANNUAL	PAREA2	5
689803.77	4285325.1	2.9911	557.19	557.19	1.5	ANNUAL	PAREA2	5
689853.77	4285325.1	2.27018	558.79	559.98	1.5	ANNUAL	PAREA2	5
689903.77	4285325.1	1.58852	561.23	561.23	1.5	ANNUAL	PAREA2	5
689953.77	4285325.1	1.12403	562.11	562.11	1.5	ANNUAL	PAREA2	5
690003.77	4285325.1	0.80488	562.47	562.47	1.5	ANNUAL	PAREA2	5
690053.77	4285325.1	0.59763	562.76	562.76	1.5	ANNUAL	PAREA2	5
690103.77	4285325.1	0.54268	557.6	562.73	1.5	ANNUAL	PAREA2	5
689653.19	4285078.7	16.46428	545.28	545.28	1.5	ANNUAL	PAREA2	5
689596.53	4285079.8	11.31303	544.73	544.73	1.5	ANNUAL	PAREA2	5
689417.31	4285054.4	0.99402	542.59	549.22	1.5	ANNUAL	PAREA2	5
689465.48	4285057.4	1.91235	543.96	548.14	1.5	ANNUAL	PAREA2	5
689160.76	4284611.2	0.25921	533.56	533.56	1.5	ANNUAL	PAREA2	5
689595.79	4284809.2	2.12495	538.38	538.38	1.5	ANNUAL	PAREA2	5
689614.28	4284828	2.69702	538.53	538.53	1.5	ANNUAL	PAREA2	5
689880.93	4283885.3	0.26706	512.72	562.51	1.5	ANNUAL	PAREA2	5
689878.21	4284393.2	1.00471	526.73	537.47	1.5	ANNUAL	PAREA2	5
689919.3	4284393.5	1.07092	528.52	528.52	1.5	ANNUAL	PAREA2	5
690067.31	4284711.8	1.26995	534.58	603.34	1.5	ANNUAL	PAREA2	5
689854.2	4285030.1	7.33273	541.82	541.82	1.5	ANNUAL	PAREA2	5
689832.17	4285004.4	9.05566	541.12	541.12	1.5	ANNUAL	PAREA2	5
689709.9	4284847.9	9.43563	538.26	538.26	1.5	ANNUAL	PAREA2	5
689566.83	4284730.6	1.27472	537.2	537.2	1.5	ANNUAL	PAREA2	5
689380.2	4284259.8	0.28447	547.59	562.94	1.5	ANNUAL	PAREA2	5
689367.58	4284231.4	0.26727	547.29	562.94	1.5	ANNUAL	PAREA2	5
689441.09	4283793	0.18999	540.33	540.33	1.5	ANNUAL	PAREA2	5
689436.64	4283733.9	0.19095	543.4	550.19	1.5	ANNUAL	PAREA2	5
689439.11	4283767.8	0.19093	541.84	547.9	1.5	ANNUAL	PAREA2	5
689436.64	4283689.1	0.1817	542.64	550.73	1.5	ANNUAL	PAREA2	5
689444.06	4283650.4	0.18287	543.87	550.78	1.5	ANNUAL	PAREA2	5
689500.74	4283585.6	0.18991	550.23	550.23	1.5	ANNUAL	PAREA2	5
689505.94	4283507.9	0.16141	540.29	550.76	1.5	ANNUAL	PAREA2	5
689546.04	4283356.6	0.12652	526.73	550.7	1.5	ANNUAL	PAREA2	5
689912.61	4283166	0.10704	520.34	526.34	1.5	ANNUAL	PAREA2	5

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Appendix C
Biological Resources



California Tree and Landscape Consulting, Inc.

Arborist Report

May 28, 2018

Kevin Sweeney
2700 South Azusa Ave., Ste 1000
West Covina, CA 91792

Attention: Mike Foote

Work location
Dorado Oaks
Diamond Springs, CA 95762

Arborist Report for Oak Woodland Resources

APN's:
054-402-18
329-301-15
329-301-20
329-310-10
329-310-11
329-310-12

Prepared by:
Gordon Mann, Consulting Arborist

!2661 Torrey Pines Drive, Auburn, CA 95602 650-740-3461

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Assignment

The subject Dorado Oaks site is an approximately 144 acre open site surrounded by single family homes on small and large parcels, and open space. The site has three main characteristics, the northwest portion that has been previously cleared, graded and not further developed, a dirt road network down the center that extends into some of the western areas, and oak woodlands and pine woodlands that have been un-maintained. The client contacted our office and requested we provide the information required to satisfy the County of El Dorado's Oak Woodland Resources, determining the oak woodland area, identifying all trees in the woodland area 24 inches in diameter and greater, all Heritage Trees 36 inches in diameter and greater, and any individual oak trees 6 inches and greater located outside of the woodland designation for tree removal and will need mitigation based on the County ORMP Oak Resources requirements and Ordinance No. 5061. This report is the result of onsite inspections performed on January 3, 14, 16, and 29, 2018, and February 1 and 3, 2018, and the use of aerial imagery.

This report is based on the proposal under the current County ORMP ordinance No. 5061and mitigation requirements.

The site was visited and walked with Charles Hughes of Sycamore Environmental Consultants, Inc., the biologist that was determining the vegetation types, wetlands, and extent of the oak woodlands. We viewed and confirmed the vegetation types and extent of the oak woodlands.

Assignment limits

All the trees were observed while standing on the ground. Data collected is limited to a visual ground inspection. The aerial image was provided by CTA Engineering and Surveying. Ground inspections and measurements were used to insure the accuracy of the inspection data. The survey data calculations were performed by CTA Engineering and Surveying, and assumed to be accurate.

Current Existing Tree Status (general)

The site is general north-south orientation entering on Faith Lane from Pleasant Valley Road from the north, and bordered on the east by Fowler Lane, bordered on the west by Tullis Mine Road and Crystal Drive, Justine Avenue, Crown Point Drive, Griffith Drive, and Antares Road. The site is not rectangular and has several different peninsulas and areas that extend outside of a rectangular shape, and all areas were included in the site visit. The development is required to comply with the El Dorado County ORMP Oak Resources requirements and Ordinance No. 5061.

The site is a mix of vegetation types with Blue Oaks, *Quercus douglasii*, Interior Live Oak, *Quercus wislizenii,* Valley Oak*, Quercus lobata,* Black Oak, Quercus *kelloggii,* and Canyon Live Oak, *Quercus chrysolepis*. The different biological communities were found to be:
California Black Oak Woodland
Valley Oak - Interior Live Oak Woodland
Valley Oak Woodland
Ponderosa Pine – Interior Live Oak Woodland
Canyon Live Oak Woodland

There were a total of 484 trees found to be either individual Oak trees 6 inches in diameter or greater, or oak trees 24 inches in diameter and greater in the project area.

There were 456 trees found to be 24 inches diameter and greater on the Oak Woodland portion of the project area, with 249 trees found to be Heritage Trees, 36 inches in diameter and greater. Of the 249 Heritage Trees, 200 were found to be in Poor condition or worse and would not require mitigation. Of the 49 Heritage Trees that would require mitigation, 22 trees are shown to be impacted by the project for a total mitigation of 947 diameter inches.

There were 28 individual Oak trees found growing in the project area. Of those, 5 trees were found to be 24 inches and greater, and of those 5 trees, 4 were found to be Heritage Trees, 36 inches diameter or greater. Of those 4 Heritage Trees, 2 were found to be in poor condition or worse and would not require mitigation. None of the individual oak trees 24 inches in diameter or greater were shown to be impacted by the project. Nine (9) of the 28 individual oak trees were shown to be impacted by the project for a total of 82 diameter inches.

Technical Recommendations

It is recommended that all tree care follow specifications written in accordance with ANSI A-300 standards. Pruning of the trees should be performed in the outer portion of the canopy to reduce leverage and end weights and allow the center of the canopies to grow and fill in with foliage. It is also recommended that when root pruning, the smallest size roots as possible be pruned, cuts be performed with handsaws, loppers, or chainsaws appropriate for the size of the root being cut. The roots should be exposed by excavating prior to cutting. Roots should be pruned prior to root removal

within the tree protection area to limit the damage and tearing of roots back towards the tree. Root pruning should be overseen by a qualified arborist.

Tree planting should follow the specifications included in Appendix A.

General Tree Care and Maintenance

The appendix information is given so that an onsite landscape manager can properly take care of the retained trees, and newly planted trees. Established native oak trees do not like to have the base of the trunk or their roots and the surrounding soil disturbed or tampered with. Applying or having unintentional landscape water in the root zone can cause catastrophic and negative affects to most species of native oak trees. Newly planted oak trees do need their root balls watered until established and then may need supplemental watering during extended periods of dry or hot weather. It is, therefore, recommended that the landscape be designed using drought tolerant plants that will require little to no watering after establishment. Irrigation should be delivered using an on-surface drip type system that does not require trenching around the oak trees to install. The plants should be spaced at least 6 feet away from the trunk of native oak trees, and the drainage from irrigation should be managed so water does not flow to the trunks of the oak trees. Trees that are growing in high use areas should be inspected by a qualified arborist for tree risk on a routine basis, the frequency depending on site use and tree condition.

Observations

The site was inspected on January 3, 14, 16, and 29, 2018, and February 1 and 3, 2018. All trees were inspected for diameter. On January 3, 2018, the site was walked with Chuck Hughes from Sycamore Environmental Consulting, Inc., and the oak woodland vegetation types and areas were confirmed. Most of the trees on the site have not received any maintenance. On January 14, 16, and 29 and February 1 and 3, 2018, the site was walked by Gordon Mann to inspect the oak trees on the whole site.

The proposed development area is 6,265,349.47square feet, or 143.83 acres. A portion of the site has been previously graded and compacted, and the trees present appear to be mostly re-growth, with a few small oak trees and pines. Other areas of the site are less disturbed or undisturbed and contain Oak Woodland in various forms as confirmed with Sycamore Environmental Consultants, Inc. The total Oak Woodland area was found to be 1,917,985.50 square feet, or 44.03 acres. The total Oak woodland proposed to be impacted is determined to be 1,235,943.53 square feet, or 28.37 acres. The total Oak Woodland canopy was found to be 30.61% of the property. The percent of the oak woodland proposed to be impacted is 64.44%.

In the oak woodland areas, the County requires the oak trees that are 24 inches and greater to be inventoried. The trees that were found to be 24 inches diameter or greater were measured with a diameter tape for accurate diameter measure, tagged, and rated for condition.

Outside of the oak woodland areas, all native oak trees 6 inches in diameter and greater are to inventoried. Those individual trees found to be 5 inches diameter or greater were measured with a diameter tape for accurate diameter measure, and any trees 6 inches in diameter or greater were tagged and rated for condition.

Each diameter tape measured tree was assessed for condition, the number of stems present, and notes explaining the tree characteristics affecting condition were recorded. The tree data is shown on the spreadsheet titled: Dorado Oaks Protected Tree Summary List, Oak Woodland Heritage Trees and Individual Oak Tree List. The spreadsheet is sorted by

There were a total of 484 trees found to be either individual Oak trees or oak trees 24 inches in diameter and greater in the project area.

There were 456 trees found to be 24 inches diameter and greater on the Oak Woodland portion of the proposed project, with 249 trees found to be Heritage Trees, 36 inches in diameter and greater. Of the 249 Heritage Trees, 200 were found to be in Poor condition or worse.

There were 28 individual Oak trees found growing in the non-oak woodland portions of the project area. Of those, 5 trees were found to be 24 inches and greater, and of those 5 trees, 4 were found to be Heritage Trees, 36 inches diameter or greater. Of those 4 Heritage Trees, 2 were found to be in poor condition or worse.

The tree condition rating is a combination of vigor, structure, trunk, branches, trunk flare, live tissue, and defects and decay or pests. It is described in % and range term. The rating scale is:

Range	# Rating	Description
Excellent	81-100	Found to have none to few defects or decay, and high vigor
Good	61-80	Found to have few defects or decay, and above average vigor
Fair	41-60	Found to have mitigatable defects, limited decay, and average vigor
Poor	21-40	Found to have significant defects, decay, and lower vigor
Very poor	120	Found to have significant defects, decay, and low declining vigor
Dead	0	Found to be dead

Plus and minus symbols are included in the rating range description on the spreadsheet to show the position of the % rating in the condition range.

The oak canopy area was calculated by CTA Engineering and Surveying using aerial imagery calculating the area of the site considered Oak Woodland. The field inspection confirmed the location of the canopy as shown on the aerial image. The trees included in the inventory were shown in their approximate location on a site plan.

Diameter at Breast Height (DBH) is the industry standard for measuring trunk diameter. For trees with straight trunks and normal taper, the measurement is taken at 4.5 feet above grade. When a swollen area, flare from branching, multiple stems, or other abnormal growth is present, the diameter at 4.5 feet would not be characteristic of the subject tree. Therefore, the measurement is taken at the most appropriate location for determining the reasonable trunk diameter, and the height of the measurement was taken is listed with the diameter measurement if not at 4.5 feet. The initial measurements were taken with a Biltmore Stick. For all trees found to be close to 24 inches diameter or greater, a second more accurate measurement was taken with a diameter tape. For individual oak trees found greater than 5 inches in diameter, a measurement was taken with a diameter tape to confirm the tree diameter and include all trees 6 inches diameter and greater.

The proposed development site is 6,265,349.47square feet, or 143.83 acres. A portion of the site has been previously graded, and the remaining trees appear to be mostly re-growth, with a few small oak trees and pines. The total Oak Woodland was found to be 1,917,985.50 square feet, or 44.03 acres. The total Oak woodland proposed to be impacted is determined to be 1,235,943.53 square feet, or 28.37 acres. The total Oak Woodland canopy was found to be 30.61% of the property. The percent of the oak woodland proposed to be impacted is 64.44%. The canopy shown on the aerial image was confirmed during the field visits to be an accurate representation.

Other testing or examination:

No additional testing or examination was requested at the time of the inspection or found necessary.

Discussion:

The project site is approximately 144 acres and contains areas of oak woodland and individual oak trees. Portions of the site were previously cleared and graded, and no further development work was performed, and some trees have naturally re-grown. The site is bordered by a range of small single-family lots, larger single family lots with some open space, open space, and commercial property.

The oak trees on the property were inspected, and the site plan was reviewed to identify those trees that will be impacted by the development. The impacted oak trees that qualify as individual oak trees outside of an oak woodland, all oak woodland canopy area, and Heritage Trees located in the oak woodland and individual oak trees were evaluated for mitigation requirements. Individual Oak trees and Heritage Trees in poor or worse condition were not included in the mitigation calculations.

The El Dorado County Oak Resource Mitigation calculation is based on the area of oak woodland impacted, the percent of oak woodland being impacted, the individual oak trees growing outside of oak woodland being impacted, and Heritage Trees both in oak woodlands and individual trees being impacted. The Oak Woodland Mitigation Ratio is determined by the amount of existing Oak Woodland canopy being impacted. A total of 1,235,943.53 square feet, or 28.37 acres is being impacted, and equals 64.44% of the Oak Woodland being impacted. The mitigation ratio chart for El Dorado County ORMP is:

Percent of Oak Woodland Impact	Oak Woodland Mitigation Ratio
0-50%	1:1
50.1 – 75%	1.5:1
75.1-100%	2:1

The proposed oak woodland impact falls into the Oak Woodland Impact range of 50.1 - 75%. The proposed oak woodland impact requires a 1.5:1 mitigation ratio. The ratio times the proposed impacted acreage results in the total acres required for mitigation. 1.5 ratio X 28.37 impacted acres = 42.56 total acres required for Oak Mitigation.

The proposed 28.37 impacted acres of oak woodland will require mitigation at the cost of $8,285.00 per acre at the 1.5 acre ratio rate, for a total acreage of 42.56 acres and a mitigation fee of $352,609.60.

There is an impact to individual oak trees. Nine (9) individual oak trees are proposed to be impacted with a total of 88 diameter inches. Each diameter inch requires $153 in mitigation fee, for a total mitigation fee of $13,464.00.

There is an impact to Heritage trees. Twenty (20) Heritage Trees are proposed to be impacted with a total of 874 diameter inches. Each diameter inch requires $459 in mitigation fee, for a total mitigation fee of $401,166.00

The total mitigation fee for the proposed project will be $767,239.60.

The oak woodland mitigation requirements for the project was calculated based on the following information:

Total area of the project area: 6,265,349.47square feet, or 143.83 acres
Total area of oak woodland: 1,917,985.50 square feet, or 44.03 acres
Total percent of existing oak woodland: 30.61%
Total area of total oak woodland to be removed: 1,235,943.53 square feet, or 28.37 acres
Total percent of oak woodland to be removed: 64.44%
Oak Woodland Mitigation Ratio: 1.5:1
Total area of Oak Woodland to be mitigated: 42.56 acres
Total number and diameter inches of individual oak trees to be removed: 9 trees, 88 diameter inches
Total number and diameter inches of Heritage Trees to be removed: 20 trees, 874 diameter inches
Total area of pre-mitigated oak canopy to be removed: 0 sq. ft.
Total area of oak canopy required to be mitigated: 1,235,943.53 square feet, or 28.37 acres
Total Oak Woodland Area Impacted Mitigation: 42.56 acres @ $8,285 per acre = $352,609.60
Individual Oak tree Impacted Mitigation: 9 trees, 88 inches, $153 per inch: $13,464
Heritage Tree Impacted Mitigation: 20 trees, 874 inches, $459 per inch: $401,166.00
Total Amount of Oak Resource Mitigation: $767,239.60

There is an existing oak corridor along most of the eastern side of the project property and adjacent properties, the south side of the project property, and the west side of the project property and adjacent properties up to the previously disturbed portion of the property. The proposed oak removal has minimal impact on these corridors, as the project was designed to retain an existing continuous edge canopy of oaks. The proposed roads and homes are located in the previously disturbed areas and the sparsest oak canopy area on the property and will have minimal impact on the remaining oak canopy on the site.

With the proposed mitigation, the proposed project is in compliance with the Ordinance 5061, Oak Resources Conservation. The project plans to pay the Oak Mitigation Fee for project approval.

The project is in compliance with General Plan Policy 7.4.5.2 by preserving native oaks wherever possible by avoiding large expanses of oak woodland, identifying how trees in the vicinity of the project or construction site will be protected and by following approved preservation methods specified in the mitigation measures.

It has been determined that the proposed project would result in less than significant impacts to oak woodland resources with incorporation of mitigation measures listed below.

For long term maintenance and the changes in site use, some pruning should be performed to larger trees along the property line borders, trees that overhang neighboring properties or areas of new roads or public space and will experience new increased uses. The pruning should be performed to remove large dead branches, shorten end weights, and reduce the risk of branch failure.

Conclusion:

The proposed Dorado Oaks project will impact existing oak woodlands and individual oak trees. Per the El Dorado County Oak Resources Conservation Ordinance mitigation will be required for 3 impacts:

1. Oak woodland is proposed to be impacted. There are 28.37 acres of Oak Woodland proposed to be impacted, and this is 64.44% of the total oak woodland area. The mitigation ratio is 1.5 times the acreage impacted, equaling 42.56 acres of oak woodland mitigation required. The cost of the 42.56 acres at $8,285 per acre amounts to $352,609.60 in mitigation fees.

2. There are 9 individual oak trees proposed to be impacted with 88 total inches of diameter. The cost for mitigation is $153 per inch. The cost of the 9 trees is $13,454.00 in mitigation fees.

3. There are 20 Heritage Trees, trees with a single, or multiple combined, trunk diameter of 36 inches or greater, in fair and better condition, proposed to be impacted. The cost for mitigation is $459 per inch. The cost of the 20 trees is $401,166.00.

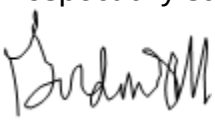
The total mitigation cost of proposed oak impacts is $767,239.60. The project plans to pay the Oak Mitigation Fee for project approval.

The mitigation proposed will meet the required mitigation based on the El Dorado County ORMP Oak Resources requirements and Ordinance No. 5061.

Please contact Gordon Mann, of California Tree and Landscape Consulting, Inc., if there are any questions about this report.

Disclaimer: Gordon Mann, has analyzed the situation, applied the proper method(s) utilized within the profession, and performed a reasonableness test to support the project tree related decisions. I, nor the employees or subcontractors of California Tree and Landscape Consulting, Inc., may be held liable for the misuse or misinterpretation of this report. As the author of this report, I do hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and that they are made in good faith.

Respectfully submitted,



Gordon Mann

ASCA Registered Consulting Arborist #480
ISA Certified Arborist WE- 0151AM
ISA TRAQ Qualified Tree Risk Assessor
California Tree and Landscape Consulting, Inc.
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650-740-3461

Attachments:

Appendix A Tree Planting Specifications
Appendix B Nursery Stock and Tree Planting
Appendix C Tree Protection
Appendix D Avoiding Damage During Construction
Resume for Gordon Mann
Dorado Oaks Protected Tree Summary List sorted by tree number and mitigation
Dorado Oaks Site Image (titled same as the CTA image to submit)

Appendix A
Tree Planting Specifications

Trees shall be free of major injury such as scrapes that remove greater than 20% of the bark circumference, a broken central leader, or constrictions from staking or support. The graft, if present, shall be consistent for the production of the cultivar or species. The trunk flare shall be at grade, not buried by soil, and adventitious roots shall not be growing from above the trunk flare.

The tree shall not be root bound in the container, and the trunk diameter relative to the container sizes, within the limits of American National Standards Institute (ANSI) Z-60 Nursery Standards.

Prior to acceptance, upon delivery, trees may be pulled from the container, so the rootball can be inspected for compliance with the specifications. An agreed upon maximum percent of trees may be checked for compliance. The nursery should provide post delivery care specifications to keep the trees in optimum condition until planting.

Tree Planting

1.0 INSPECT THE TREE

1.1 Carefully remove the soil at the top of the container to locate the trunk flare. Check for girdling roots and damage to the root system and lower trunk.
1.2 Until a relationship is established with the supplying nursery, randomly select an acceptable sample for the delivery. Inspect the root system by taking the rootball out of the container, and remove all the soil from the root system. Inspect the inner roots to verify that the roots were properly pruned when moved from the initial container to the next larger size. Keep the root system moist during the check. If the roots were properly pruned during container transfer, and the roots have been kept moist, the tree can be planted as a bare root tree.
1.3 If the trees are acceptable, each tree shall be removed from the container prior to digging the hole, and the depth of the rootball from the trunk flare to the bottom of the rootball shall be measured. This measurement, less 1” is the depth the pedestal in the center of the planting hole shall be excavated to.

2.0 DIG THE HOLE

2.1 Shave and discard grass and weeds from the planting site.
2.2 The hole should be a minimum 3 times the diameter of the container diameter.
2.2.1 Square containers shall be dug with a circular hole 3 times the container measurement.
2.3 Dig the hole, leaving an undisturbed pedestal in the center that the root ball will be set on.
2.4 The pedestal shall be excavated to the depth measurement determined above

3.0 ROOT BALL PREPARATION

3.1 Loosen and straighten outside and bottom roots prior to placing the rootball on the pedestal. The trunk flare (the point where the trunk meets the roots) should be 1” above ground level.
3.2 Winding and girdling roots shall be pruned to either the point they are perpendicular to the root ball, or a point where they can be straightened and placed perpendicular to the rootball.
3.3 Keep the roots moist during this process so they do not dry out.

4.0 BACKFILL

4.1 Hold the tree so the trunk and central leader are in a straight upright position.
4.2 Backfill soil with the soil you removed around the base of the pedestal and rootball no higher than 2/3, so the tree stands in the upright position
4.3 Tamp the soil to remove air gaps, or fill with water and allow soil to settle and drain. Continue to fill the entire hole with existing soil in layers and tamping, up to finished grade. Backfill soil shall not be placed on top of the rootball.
4.4 Build a berm at the outside edge of the rootball. The berm shall be a minimum 3 inches high and wide.
4.5 Cover the remainder of the backfill soil outside the berm with a set level of mulch (2 to 4 inches deep).

5.0 STAKING

5.1 Remove the nursery stake (the thin stake tied to the trunk) that is secured to the tree.
5.2 Install the appropriate number of stakes – for example, two stakes on the windward and leeward side of the tree, set at least 2 feet into the native soil outside the rootball.
5.2.1If the area is exceptionally windy, high traffic, or when specified, install 3 or 4 stakes spaced evenly around the circumference, outside the rootball.
5.3 One tie per stake shall be placed at the lowest point on the trunk where the tree crown stands upright. Ties shall be placed using a "figure 8" crossing pattern wrapped around the trunk and firmly tied or attached to the stake.
5.3.1 Ties shall be loose enough so the tree crown moves up to 3 times the trunk diameter in the wind, and taut enough that the trunk does not rub the stakes during movement.
5.4 The stakes shall be cut off above the tie point so branches do not rub the stake above the tie point.
5.5 Check the stakes and ties periodically, removing them when the tree is able to stand on its own.
5.6 If a leader that should be vertical is drooping, the leader may be temporarily straightened using a bamboo or small diameter wood splint approximately 25% longer than the drooping section of stem, tied to the stem at the top and bottom of the splint to hold the stem vertical. The splint shall be removed prior to girdling or constricting the stem, and may be re-installed as necessary.

6.0 MULCH

6.1 Apply a set depth (2 to 4 inches) of wood chips or other organic mulch over the planting hole excavated soil.
6.2 Mulch may be placed inside the berm and shall be kept at least 4" away from the trunk flare.
6.3 The soil area of the planting hole shall be kept clear of grass and landscape plantings.

7.0 WATER/IRRIGATION

7.1 Apply water using a low pressure application, i.e.: trickle from a hose, soaker hose, or bubbler.
7.2 Use low water volume to apply the water. Add water long enough to saturate the rootball and planting area.
7.2.1 Lawn sprinklers shall not be considered an acceptable method of applying irrigation to newly planted trees.
7.3 The initial watering frequency shall be checked by monitoring the soil moisture. Based on the temperature and humidity, learn how long the soil retains the moisture.
7.4 After the soil is below field capacity, and before it dries out, repeat the watering process, every so determined days.
7.4.1 As the weather and seasons change, the irrigation frequency may change. This will be evaluated by checking soil moisture following water application.
7.4.1.1 For example: you may learn irrigation should be applied twice a week during the fall, except in cool or rainy weather. Irrigation may need to be applied every two days during hot dry summer periods.
7.5 Irrigation shall be continued for the first three years after planting.
7.5.1 Avoiding drying out the rootball and adjacent soil is critcal for tree growth and establishment.

8.0 PROTECT THE TRUNK

8.1 Avoid damage from mowers and string trimmers to the tender bark of the young tree.
8.2 Maintain a clear area free of vegetation around the trunk in the berm or basin area.
8.3 Keep the set depth of mulch (2 to 4 inches) coverage of the area around the tree.
8.4 Retain temporary low branches along the trunk to shade and feed the trunk.

9.0 PRUNING NEWLY PLANTED TREES

9.1 Broken and dead branches shall be pruned.
9.2 A central leader shall be identified and retained if present. If co-dominant leaders are present, they shall be pruned to be shorter than the central leader by 20%.
9.3 All low temporary branches on the lower trunk shall be retained, and if needed shortened for clearance.



Detail for #1, #5 and #15 container planting stock

10. **FUTURE CARE**

10.1 During subsequent years, the berm should be enlarged or removed to in order to provide water to the increasing root growth. The watering area should target new root growth and projected root growth.

10.2 Pruning should retain a dominant central leader; and retain low temporary branches until trunk bark hardens or remove before branch diameter becomes too large.

Appendix B

Nursery Stock and Tree Planting

Nursery Stock purchase

Trees purchased for the subject project shall be the Genus, species, and cultivar specified in the purchase documents. Trees shall be grown to be free of bound root systems caused by winding roots or kinked roots from a previous smaller container. As trees are moved to larger containers, circling roots shall be either pruned to a point where they can grow straight, straightened in the new container, or removed. Kinked roots shall be pruned to a point where they will grow straight outward or downward.

The trunk and branches shall be of a structure where a central leader is defined, or the central leader can be easily selected. The competing leaders have a smaller diameter, and can be pruned shorter.

Appendix C

Tree Protection

The edge of the tree canopy outside of the construction area shall be fenced off with construction fencing, either temporary orange fence or chain link fence. The fence shall be placed as far from the trees as possible, targeting outside the dripline. If the fence cannot be placed outside of the dripline, the project arborist shall determine if the distance is acceptable or some other soil protection is necessary. A certified arborist must approve the placement of the tree fence. The fence will be marked with weather appropriate signage clearly stating the area as “Protected! Do not enter! Tree preservation zone.” Sign(s) will be placed on every face or direction of fence line.

When excavating or trenching adjacent to trees, roots 2 inches and greater encountered in the trench shall be cleanly severed at the trench side closest to the tree, and then excavated, so the roots are not torn back towards the tree. Cut exposed roots ends or exposed roots shall be covered with moist soil or moist burlap and kept moist until the soil is backfilled.

No storage of supplies or materials, parking, or other construction activity shall occur within the fenced area. If a construction activity is required within the construction area, specific specifications and mitigation shall be written to cover the work, and the fencing may be entered during the necessary construction activity, then the fencing shall be replaced after the activity is completed for the day.

The construction protection shall remain in place until the project is completed, including landscape activities. Landscape activities shall have specifications that protect the trees during the landscape activities.

Any bare soil around protected trees should be covered with a 4-inch layer of mulch consisting of ground-up tree parts.

If the protected trees appear to show signs of yellowing leaves, dead leaves, or other abnormal appearance, contact the project arborist for inspection and mitigation.

Long Term Landscape Maintenance Plan and Specifications

General

This plan and specifications are intended to promote the optimum landscape growth and lifespan. Individual tree planting in specific sites in the parking lot are intended to provide a large shade canopy over time covering 50% or greater of the parking lot. The border and natural screening plantings are overplanted and intended to fill the space initially, and have the weaker trees removed over time, to create the space and site resources necessary for the remaining trees. Trees initially will be planted on approximate 10 foot centers, with the long term spacing to be approximately 20 foot centers. As trees are thinned, they may be transplanted or removed, as best suited to the remaining trees on the site.

These trees shall be pruned to establish a central leader, to provide the best structure by managing size relationships between parent and subordinate trunk and branches, and to encourage growth into a large shade canopy. These trees shall not be topped or rounded over. Trees may have competing leaders headed back to promote the strong central leader necessary to eliminate co-dominant stems and weak branching.

Design Intent

The trees planted around the perimeter and alongside the sidewalk or street are intended to replicate natural areas and to screen the project and adjacent properties. The native oaks shall be more tightly spaced at planting and thinned over time to promote the growth of the final or climax trees on the site. The thinning for spacing shall be performed as the trees get larger and their crowns begin to overlap. When the desired tree crowns are being impacted by an adjacent tree, the adjacent tree should either be pruned or removed, to provide the optimum screening while enhancing the desired tree growth. Pruning shall retain a dominant central leader and for decurrent tree structures, remove competing leaders, and maintain the appropriate size relationships between parent and subordinate trunk and branches.

Pruning Small Trees

Branches are to be pruned by either reduction, thinning, or raising cuts to achieve the appropriate clearance over the area. The smallest diameter branches should be removed, working from the branch tips towards the center, removing none to minimal interior foliage inside the final outward branch cut. Trees shall be cleaned to remove dead branches, weakly attached branches, and branches where significant damage has occurred by rubbing, animals, insects, or critical disease. All pruning cuts shall be made in accordance with American National Standards Institute (ANSI) A300 Part 1 Pruning Standards and International Society of Arboriculture (ISA) Best Management Practices for Pruning.

On trees up to six inches in diameter, all dead branches greater than one-half inch diameter shall be removed. All weakly attached branches and potential co-dominant branches shall either be reduced by at least 20% or be removed, as most appropriate for the long term structure of the tree. The weakest or most damaged branch of a pair or group of rubbing branches shall be shortened to avoid rubbing, or removed. All temporary branches along the trunk should be retained and shortened to obtain necessary clearance. When either temporary branches exceed one-inch diameter, or the trunk forms mature bark, the temporary branches should be removed.

Stakes shall be installed as necessary to support a straight growing tree, and reduce crooked growth caused by high wind. The trunk shall be supported at the lowest point to keep the crown supported straight, and the portions of the stake above the tie point cut off to avoid rubbing branches. After the tree becomes firmly rooted, and the stake is no longer necessary to support the tree, the stakes shall be removed.

Depending on the location and site needs, clearance should be performed by pruning the smallest branches inward from the branch tips until the permanent branches are in place. Clearance minimums should be set, for example: 7.5' over sidewalks, 10 feet over parking spaces, and 14.5 feet over truck traffic streets. Clearance pruning shall be carefully performed until the permanent branches are identified. Up to 25% of the total foliage on any tree should be the maximum removed during any planned pruning cycle. Follow-up pruning for structure or clearance on young trees can be performed at any time if pruning small amounts of foliage (up to 10%) and retaining the central leader and branch size relationships.

Pruning Large Trees

Branches are to be pruned by either reduction, thinning, or raising cuts to achieve the appropriate clearance over the area. The smallest diameter branches should be removed, working from the branch tips towards the center, removing none to minimal interior foliage inside the final outward branch cut. Trees shall be cleaned to remove dead branches, weakly attached branches, and branches where significant damage has occurred by rubbing, animals, insects, or critical disease. All pruning cuts shall be made in accordance with American National Standards Institute (ANSI) A300 Part 1 Pruning Standards and International Society of Arboriculture (ISA) Best Management Practices for Pruning.

On trees larger than six inches in diameter, all dead branches greater than one-inch diameter shall be removed. Long heavy branches that are either growing flat or bending down shall have approximately 15% of the end weight reduced, accomplished by a combination of pruning the downward growing branches, shortening long tips, and thinning endweights. If any structural issues are observed by the climber working in the tree, they shall notify the property manager immediately to discuss the tree's needs.

Depending on the location and site needs, clearance should be performed by pruning the smallest branches inward from the branch tips until the permanent branches are in place. Clearance minimums should be set, for example: 7.5' over sidewalks, 10 feet over parking spaces, and 14.5 feet over truck traffic streets. Clearance pruning shall be carefully performed until the permanent branches are identified. Up to 25% of the total foliage on any tree should be the maximum removed during any planned pruning cycle.

Any special site issues for utility clearance or conflicts with other objects shall be managed by early pruning to direct growth away from the target lines, overhead lights, flags, or buildings.

Thinning of Dense Planting

Many landscape plantings and natural landscape areas are over-planted by installing a greater number of plants at closer spacing than optimum for the full-sized plants. Over time, plants will grow into each other, the crowns will conflict, and the spacing will need to be corrected. Correct spacing is obtained by removing the least desirable plants to meet the final spacing target, within reasonable tolerances.

If conflicting plants are all healthy, it won't matter which plants are removed to achieve the spacing distances. Spaced thinning should be performed before the foliar crowns are intertwined or overlapping. The thinning may be performed over two or three cycles as the trees grow over time, depending on the density and desired final spacing.

The trees initially will be planted on approximate 10 foot centers, with the long term spacing to be approximately 20 foot centers. The healthiest and best specimens should be retained on site. As trees are thinned, they may be transplanted or removed, as best suits the remaining trees on the site.

Appendix D

Avoiding Tree Damage During Construction

Edited from the ISA's tree protection guidelines

As cities and suburbs expand, wooded lands are being developed into commercial and residential sites. Homes are constructed in the midst of trees to take advantage of the aesthetic and environmental value of the wooded lots. Wooded properties can be worth as much as 20 percent more than those without trees, and people value the opportunity to live among trees.

Unfortunately, the processes involved with construction can be deadly to nearby trees. Unless the damage is extreme, the trees may not die immediately but could decline over several years. With this delay in symptom development, you may not associate the loss of the tree with the construction.

It is possible to preserve trees on building sites if the right measures are taken. The most important step is to hire a professional arborist during the planning stage. An arborist can help you decide which trees can be saved and can work with the builder to protect the trees throughout each construction phase.

How Trees Are Damaged During Construction

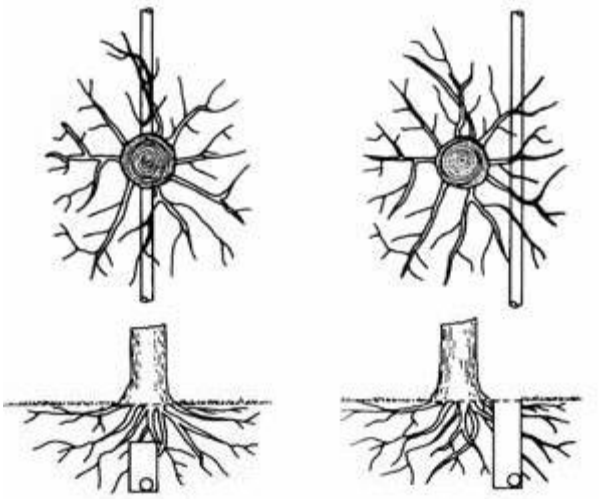
Physical Injury to Trunk and Crown. Construction equipment can injure the aboveground portion of a tree by breaking branches, tearing the bark, and wounding the trunk. These injuries are permanent and, if extensive, can be fatal.

Cutting of Roots. The digging and trenching that are necessary to construct a house and install underground utilities will likely sever a portion of the roots of many trees in the area. It is easy to appreciate the potential for damage if you understand where roots grow. The roots of a tree are found mostly in the upper 6 to 24 inches of the soil. In a mature tree, the roots extend far from the trunk. In fact, roots typically are found growing a distance of one to three times the height of the tree. The amount of damage a tree can suffer from root loss depends, in part, on how close to the tree the cut is made. Severing one major root can cause the loss of 5 to 20 percent of the root system.



The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil.

Another problem that may result from root loss caused by digging and trenching is that the potential for the trees to fall over is increased. The roots play a critical role in anchoring a tree. If the major support roots are cut on one side of a tree, the tree may fall or blow over.



Less damage is done to tree roots if utilities are tunneled under a tree (right, top and bottom) rather than across the roots (left, top and bottom).

Less damage is done to tree roots if utilities are tunneled under a tree rather than across the roots.

Soil Compaction. An ideal soil for root growth and development is about 50 percent pore space. These pores—the spaces between soil particles—are filled with water and air. The heavy equipment used in construction compacts the soil and can dramatically reduce the amount of pore space. This compaction not only inhibits root growth and penetration but also decreases oxygen in the soil that is essential to the growth and function of the roots, and water infiltration.

Smothering Roots by Adding Soil. Most people are surprised to learn that 90 percent of the fine roots that absorb water and minerals are in the upper 6 to 12 inches of soil. Roots require space, air, and water. Roots grow best where these requirements are met, which is usually near the soil surface. Piling soil over the root system or increasing the grade smothers the roots. It takes only a few inches of added soil to kill a sensitive mature tree.

Exposure to the Elements. Trees in a forest grow as a community, protecting each other from the elements. The trees grow tall, with long, straight trunks and high canopies. Removing neighboring trees or opening the shared canopies of trees during construction exposes the remaining trees to sunlight and wind. The higher levels of sunlight may cause sunscald on the trunks and branches. Also, the remaining trees are more prone to breaking from wind or ice loading.

Getting Advice

Hire a professional arborist in the early planning stage. Many of the trees on your property may be saved if the proper steps are taken. Allow the arborist to meet with you and your building contractor. Your arborist can assess the trees on your property, determine which are healthy and structurally sound, and suggest measures to preserve and protect them.

One of the first decisions is determining which trees are to be preserved and which should be removed. You must consider the species, size, maturity, location, and condition of each tree. The largest, most mature trees are not always the best choices to preserve. Younger, more vigorous trees usually can survive and adapt to the stresses of construction better. Try to maintain diversity of species and ages. Your arborist can advise you about which trees are more sensitive to compaction, grade changes, and root damage.

Planning

Your arborist and builder should work together in planning the construction. The builder may need to be educated regarding the value of the trees on your property and the importance of saving them. Few builders are aware of the way trees' roots grow and what must be done to protect them.

Sometimes small changes in the placement or design of your house can make a great difference in whether a critical tree will survive. An alternative plan may be more friendly to the root system. For example, bridging over the roots may substitute for a conventional walkway. Because trenching near a tree for utility installation can be damaging, tunneling under the root system may be a good option.

Erecting Barriers

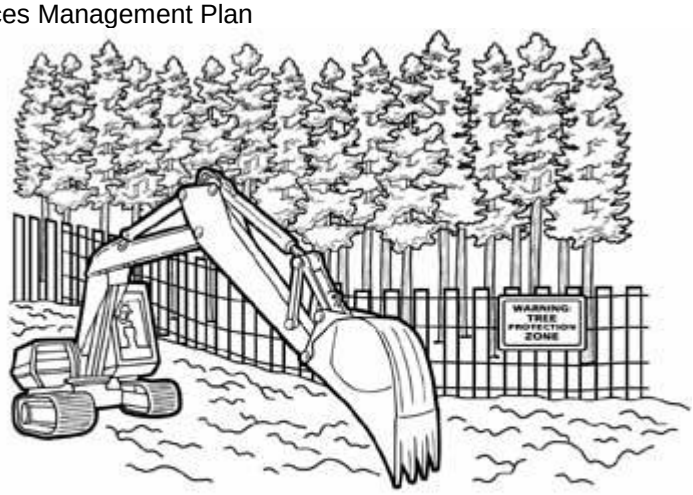
Because our ability to repair construction damage to trees is limited, it is vital that trees be protected from injury. The single most important action you can take is to set up construction fences around all of the trees that are to remain. The fences should be placed as far out from the trunks of the trees as possible. As a general guideline, allow 1 foot of space from the trunk for each inch of trunk diameter. The intent is not merely to protect the aboveground portions of the trees but also the root systems. Remember that the root systems extend much farther than the drip lines of the trees.

Instruct construction personnel to keep the fenced area clear of building materials, waste, excess soil, and equipment. No digging, trenching, or other soil disturbance such as driving vehicles and equipment over the soil should be allowed in the fenced area.

Protective fences should be erected as far out from the trunks as possible in order to protect the root system prior to the commencement of any site work, including grading, demolition, and grubbing.

Limiting Access

If at all possible, it is best to allow only one access route on and off the property. All contractors must be instructed where they are permitted to drive and park their vehicles. The construction access drive should be the route for utility wires; underground water, sewer, or storm drain lines; roadways; or the driveway.



Protective fences should be erected as far out from the trunks as possible in order to protect the root systems.

Specify storage areas for equipment, soil, and construction materials. Limit areas for burning (if permitted), cement wash-out pits, and construction work zones. These areas should be away from protected trees.

Specifications

Specifications are to be put in writing. All of the measures intended to protect your trees must be written into the construction specifications. The written specifications should detail exactly what can and cannot be done to and around the trees. Each subcontractor must be made aware of the barriers, limitations, and specified work zones. It is a good idea to post signs as a reminder.

Fines and penalties for violations should be built into the specifications. Not too surprisingly, subcontractors are much more likely to adhere to the tree preservation clauses if their profit is at stake. The severity of the fines should be proportional to the potential damage to the trees and should increase for multiple infractions.

Maintaining Good Communications

It is important to work together as a team. You may share clear objectives with your arborist and your builder, but one subcontractor can destroy your prudent efforts. Construction damage to trees is often irreversible.

Visit the site at least once a day if possible. Your vigilance will pay off as workers learn to take your wishes seriously. Take photos at every stage of construction. If any infraction of the specifications does occur, it will be important to prove liability.

Final Stages

It is not unusual to go to great lengths to preserve trees during construction, only to have them injured during landscaping. Installing irrigation systems and roto-tilling planting beds are two ways the root systems of trees can be damaged. Remember also that small increases in grade (as little as 2 to 6 inches) that place additional soil over the roots can be devastating to your trees. ANSI A300

Standards Part 5 states that tree protection shall be in place for the landscape phase of the site development. Landscape tree protection may be different than other construction process tree protection, and a conference with the landscape contractor should be held prior to the commencement of the landscape work. Careful planning and communicating with landscape designers and contractors is just as important as avoiding tree damage during construction.

Post-Construction Tree Maintenance

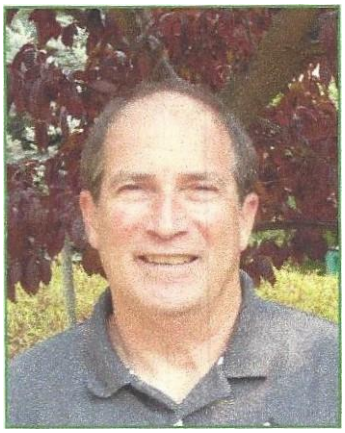
Your trees may require several years to adjust to the injury and environmental changes that occur during construction. The better construction impacts are avoided, the less construction stress the trees will experience. Stressed trees are more prone to health problems such as disease and insect infestations. Talk to your arborist about continued maintenance for your trees. Continue to monitor your trees, and have them periodically evaluated for declining health or safety hazards.

Despite the best intentions and most stringent tree preservation measures, your trees still might be injured from the construction process. Your arborist can suggest remedial treatments to help reduce stress and improve the growing conditions around your trees. In addition, the International Society of Arboriculture offers a companion to this brochure titled “Treatment of Trees Damaged by Construction”.

Edited from the ISA’s tree protection guidelines

California Tree and Landscape Consulting, Inc.

GORDON MANN



EDUCATION AND QUALIFICATIONS

1977	Bachelor of Science, Forestry, University of Illinois, Champaign.
1982 - 1985	Horticulture Courses, College of San Mateo, San Mateo.
1984	Certified as an Arborist, WE-0151A, by the International Society of Arboriculture (ISA).
2004	Certified as a Municipal Specialist, WE-0151AM, by the ISA.
2011	Registered Consulting Arborist, #480, by the American Society of Consulting Arborists (ASCA).
2003	Graduate of the ASCA Consulting Academy.
2006	Certified as an Urban Forester, #127, by the California Urban Forests Council (CaUFC).
2011	TRACE Tree Risk Assessment Certified, continued as an ISA Qualified Tree Risk Assessor (T.R.A.Q.).

PROFESSIONAL EXPERIENCE

2016 – Present CALIFORNIA TREE AND LANDSCAPE CONSULTING, INC (CalTLC). President and Consulting Arborist.
Auburn. Mr. Mann provides consultation to private and public clients in health and structure analysis, inventories, management planning for the care of trees, tree appraisal, risk assessment and management, and urban forest management plans.

1986 - Present MANN MADE RESOURCES. Owner and Consulting Arborist. Auburn.
Mr. Mann provides consultation in municipal tree and risk management, public administration, and developing and marketing tree conservation products.

2015 – 2017 CITY OF RANCHO CORDOVA, CA. Contract City Arborist.
Mr. Mann serves as the City's first arborist, developing the tree planting and tree maintenance programs, performing tree inspections, updating ordinances, providing public education, and creating a management plan,

1984 – 2007 CITY OF REDWOOD CITY, CA. City Arborist, Arborist, and Public Works Superintendent.
Mr. Mann developed the Tree Preservation and Sidewalk Repair Program, supervised and managed the tree maintenance program, performed inspections and administered the Tree Preservation Ordinance. Additionally, he oversaw the following Public Works programs: Streets, Sidewalk, Traffic Signals and Streetlights, Parking Meters, Signs and Markings, and Trees.

1982 – 1984 CITY OF SAN MATEO, CA. Tree Maintenance Supervisor.
For the City of San Mateo, Mr. Mann provided supervision and management of the tree maintenance program, and inspection and administration of the Heritage Tree Ordinance.

1977 – 1982 VILLAGE OF BROOKFIELD, IL. Village Forester.
Mr. Mann provided inspection of tree contractors, tree inspections, managed the response to Dutch Elm Disease. He developed an in-house urban forestry program with leadworker, supervision, and management duties to complement the contract program.

1979 - Present INTERNATIONAL SOCIETY OF ARBORICULTURE. Member.

- Board of Directors (2015 - Present)

- True Professional of Arboriculture Award (2011); In recognition of material and substantial contribution to the progress of arboriculture and having given unselfishly to support arboriculture.

1982 - Present WESTERN CHAPTER ISA (WCISA). Member.

- Chairman of the Student Committee (2014 - 2017)
- Member of the Certification Committee (2007 - Present)
- Chairman of the Municipal Committee (2009 - 2014) • Award of Merit (2016) In recognition of outstanding meritorious service in advancing the principles, ideals and practices of arboriculture.
- Annual Conference Chair (2012)
- Certification Proctor (2010 – Present)
- President (1992 - 1993)
- Award of Achievement and President's Award (1990)

1985 - Present CALIFORNIA URBAN FORESTS COUNCIL (CaUFC). Member; Board Member (2010 - Present)

1985 - Present SOCIETY OF MUNICIPAL ARBORISTS (SMA). Member. e Legacy Project of the Year (2015) o In recognition of outstanding meritorious service in advancing the principles, ideals and practices of arboriculture.

- Board Member (2005 - 2007)

2001 - Present AMERICAN SOCIETY OF CONSULTING ARBORISTS.
Member. e Board of Directors (2006 - 2013)
• President (2012)

2001 - Present CAL FIRE. Advisory Position.
• Chairman of the California Urban Forestry Advisory Committee (2014 - 2017)

2007 – Present AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI): A300 TREE MAINTENANCE STANDARDS
COMMITTEE. SMA Representative and Alternate.

- Alternative Representative for SMA (2004 - 2007; 2012 - Present)
- Representative for SMA (2007 - 2012)

2007 - Present SACRAMENTO TREE FOUNDATION. Member and Employee.

- Co-chair/member of the Technical Advisory Committee (2012 - Present)
- Urban Forest Services Director (2007 - 2009) e Facilitator of the Regional Ordinance Committee (2007 - 2009)
- 1988 - 1994 TREE CLIMBING COMPETITION.
  - Chairman for Northern California (1988 - 1992)
  - Chairperson for International (1991 - 1994)

PUBLICA TIONS AND LECTURES

Mr. Mann has authored numerous articles in newsletters and magazines such as Western Arborist, Arborist News, City Trees, Tree Care Industry Association, Utility Arborists Association, CityTrees, and Arborists Online, covering a range of topics on Urban Forestry, Tree Care, and Tree Management. He has developed and led the training for several programs with the California Arborist Association. Additionally, Mr. Mann regularly presents at numerous professional association meetings on urban tree management topics.

A ssumptions and Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.
2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.
3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.
4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.
5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.
6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant‘s prior express written consent.
7. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant’s fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.
8. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.
9. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing or coring. Consultant makes no warranty or guarantee, express or implied that the problems or deficiencies of the plans or property in question may not arise in the future.
10. Loss or alteration of any part of this Agreement invalidates the entire report.

Certificate of Performance

I, Gordon Mann, certify that:

I have personally inspected the trees and site referred to in this report, and have stated my findings accurately. The extent of the inspection is stated in the attached report under Assignment;

I have no current or prospective interest in the vegetation, or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved;

The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts;

My analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices;

No one provided significant professional assistance to me, except as indicated within the report;

My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client, or any other party, nor upon the results of the assignment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the International Society of Arboriculture (ISA) and an ISA Certified Arborist and Municipal Specialist. I am also a Registered Consulting Arborist member in good standing of the American Society of Consulting Arborists. I have been involved in the practice of arboriculture and the care and study of trees for over 39 years.

Signed:



Gordon Mann
Date: May 28, 2018

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE

±139-ACRE STONEHENGE STUDY AREA

EL DORADO COUNTY, CALIFORNIA



Prepared for:
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JUNE 2, 2009

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Appendix D. Special-Status Wildlife Species Known to Occur in the Region of the Stonehenge Study Area

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE
±139-ACRE STONEHENGE STUDY AREA

INTRODUCTION

Project Location

North Fork Associates conducted a biological resources assessment for an approximate 139-acre Stonehenge study area in the community of Diamond Springs, El Dorado County, California. The study area is located just south of the intersection of California Highway 49/Pleasant Valley Road and Faith Lane. The location corresponds to portions of Sections 25, 30, 31, and 36, Township 10N, Range 10E and 11E on the Placerville 7.5 minute United States Geological Survey (USGS) quadrangle (Figure 1). Approximate coordinates of the center of the site are 38.68515° north and 120.81921° west.

Setting

The study area is situated in the lower Sierra Nevada foothills at elevations between 1670 and 1845 feet. The property is currently undeveloped except for a series of dirt roads and an El Dorado Irrigation District station structure. Most of the dirt roads bisect the middle of the study area in a north/south direction and are heavily used. Disturbed habitat is present in this area. Oak woodland occurs along the western and eastern boundaries of the study area. Adjacent land use includes residential and open land to the west, undeveloped land to the south, residential to the east, and some mixed residential and commercial use the north of the site (Figure 2).

Proposed Project Description

No plans for this site have been developed at this time.

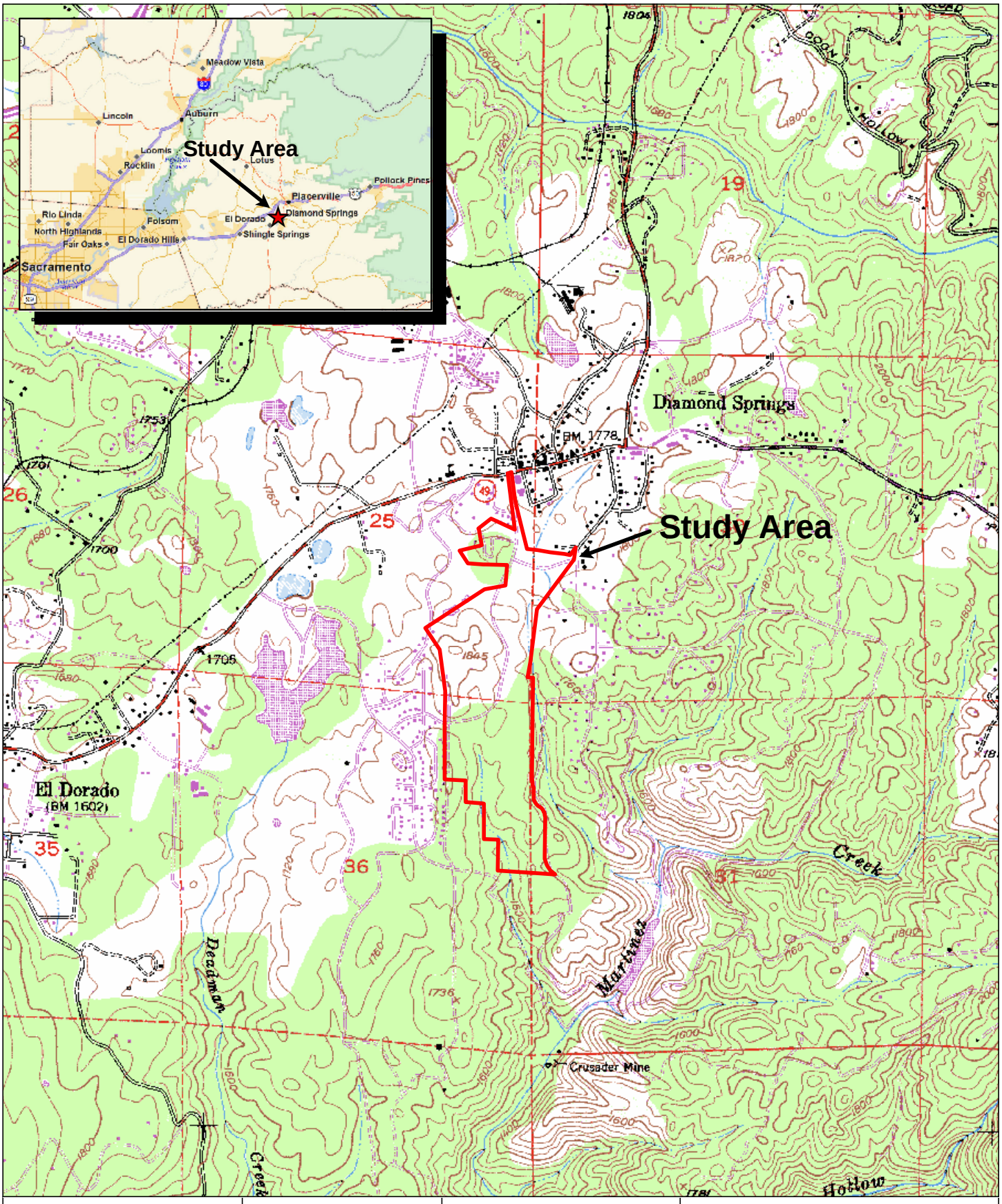
Objectives of Biological Resources Assessment

- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide conclusions and recommendations.

METHODS

Literature Review

A variety of resources were used in this assessment. Aerial photographs and a topographic map of the study area were obtained from Cooper Thorne and Associates,



north fork associates

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Scale in Feet

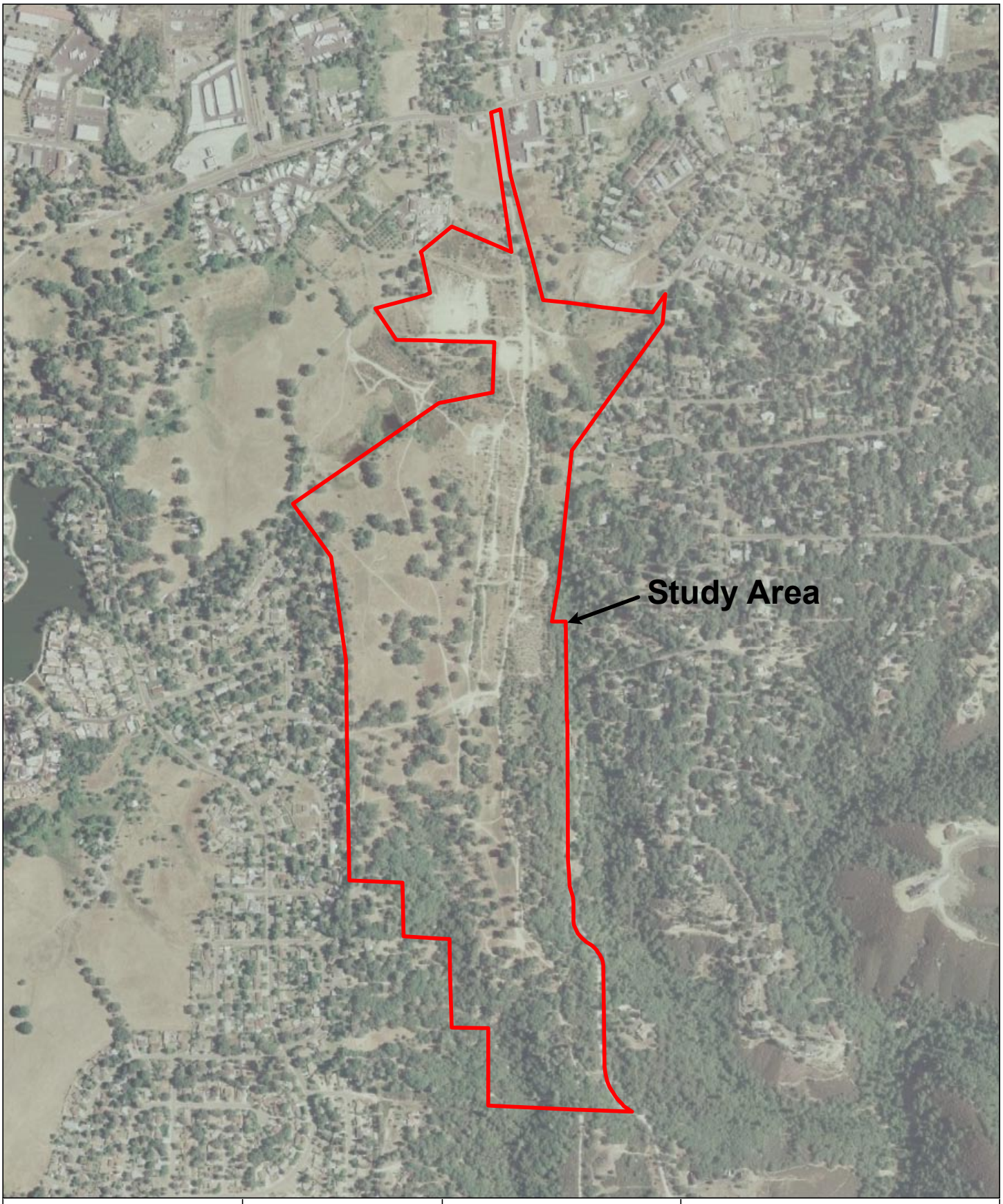
NOTES:
Sections 25, 30, 31 & 36
Township: 10N
Range: 10E & 11E
USGS Quad: Placerville, CA

Figure 1

SITE AND VICINITY

Stonehenge Study Area

El Dorado County, CA



north fork associates

N

0 400 800

Scale in Feet

Aerial Photo Date: 2007 (ESRI)

Figure 2

AERIAL PHOTO

Stonehenge Study Area

El Dorado County, CA

Inc. Geological information was taken from the Geologic Map of the Sacramento Quadrangle (California Department of Conservation 1987). Soil information was obtained from the *Soil Survey of El Dorado Area, California* (USDA, NRCS 1974).

Multiple publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring animal species. They include published books, peer-reviewed articles, field guides, and the California Wildlife Habitats Relationships Program.

Special-Status Species Reports

North Fork Associates queried the California Natural Diversity Data Base (CNDDB) for location records for special-status species known to occur in the region surrounding the study area. Quadrangles included in the query were Placerville, Coloma, Garden Valley, Slate Mountain, Shingle Springs, Camino, Latrobe, Fiddletown, and Aukum quadrangles. North Fork Associates biologists also reviewed the special-status species lists for the Placerville USGS quadrangle and El Dorado County created by the U.S. Fish and Wildlife Service (USFWS). The California Native Plant Society (CNPS) Inventory was checked for special-status plants occurring in the area.

For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under the federal Endangered Species Act (including candidates and species proposed for listing),
- listed as endangered or threatened under the California Endangered Species Act (including candidates and species proposed for listing),
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code (CDFG),
- designated a Species of Concern by the CDFG,
- defined as rare or endangered under Section 15380 of the California Environmental Quality Act (CEQA), or
- occurring on List 1, 2, or 3 maintained by the California Native Plant Society.

Field Surveys

The field assessment portion of the study was conducted in August 2006, January 2007, May and June 2008, and May 2009 by Pat Britton, Erin Gottschalk-Fisher, Barry Anderson, Gaylene Tupen, and Melissa Hostler. A wetland delineation was also conducted in conjunction with this study. Site surveys assessed habitat conditions and determined the potential for occurrence of special-status plant and wildlife species. Surveys were done floristically and in accordance with California Department of Fish and Game guidelines and each plant species observed was identified to the extent necessary for determining its rarity status. On all visits, surveys consisted of walking the site, recording notes of species observed or their respective sign (nests, burrows, tracks, scat), and assessing habitat conditions. Appendix A is a list of plants observed, and Appendix B is a list of wildlife observed onsite. Plant names are according to *The*

Jepson Manual (Hickman 1993), except for changes obtained from the Jepson Interchange, an online database maintained by the University of California and Jepson Herbaria. Standard manuals were used to identify wildlife species observed.

SURVEY AND LITERATURE SEARCH RESULTS

Geology and Soils

The geology map for the area shows that soils are derived from Mesozoic granitic: Granodiorite, Upper Jurassic Marine Sedimentary, and Metasedimentary rocks.

Five soil units have been mapped in the study area:

- Diamond Springs very fine sandy loam, 9 to 15 percent slopes
- Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes
- Placer Diggings
- Mixed alluvial land
- Mariposa very rocky silt loam, 50 to 70 percent slopes

Diamond Springs soils are acidic Typic Haploxerults derived from igneous rock. The A horizon is relatively shallow, usually nine (9) inches or less, and is usually a loam or sandy loam. The B horizon, nine (9) to 29 inches, is a clay loam that tends to impede the percolation of water. A horizon hues are 10YR and 7.5YR, and chromas are between two (2) and five (5). The B horizon hues are similar, but patches of 5YR soils are also present. B horizon chromas are generally high, two (2) and above. Diamond Springs soils are well-drained and have moderate or moderately slow permeability.

Placer diggings consists of areas of stony, cobbly, and gravelly material, commonly in beds of creeks and other streams, or of areas that have been placer mined and contain enough fine sand or silt to support some grass for grazing. The material that makes up this land type is derived from a mixture of rocks and commonly is stratified or poorly sorted. In some areas where slopes are steep, the material consists of fines from stamp mills or tailings from placer mining. The depth of the soil material is variable, ranging from six (6) inches to more than five (5) feet. Natural drainage varies from place to place.

Mixed alluvial land consists of small areas of recent mixed alluvium adjacent to stream channels. This material is variable in color and is stratified gravelly sandy loam, gravelly loam, and gravelly clay loam that grades into sand and gravel as depth increases. Permeability is moderately rapid to slow. This land type is moderately well drained to somewhat poorly drained. Surface runoff is slow to medium, and the erosion hazard is moderate. The land is subject to frequent flooding in the winter. Mixed alluvial land is used for pasture and range.

Mariposa soils are moderately deep, well drained Typic Haploxerults formed in material weathered from tilted slates and schists. The A horizon is typically shallow at 8 inches or less. Runoff is slow to very rapid and permeability is moderate.

Hydrology

The Stonehenge study area lies in the Upper Cosumnes (18040013) HUC unit (Cal Water, 1999) and ranges from a ridge in the western portion of the study area to a leveled section in the central portion of the study area to a generally sloped area in the eastern portion of the study area. The main hydrological features of the site are two unnamed streams (one ephemeral and one intermittent) that run along the eastern and southwestern portions of the study area. Both streams eventually empty into Martinez Creek. Martinez Creek is a tributary of the Cosumnes River, which ultimately reaches the San Joaquin River.

Biological Communities

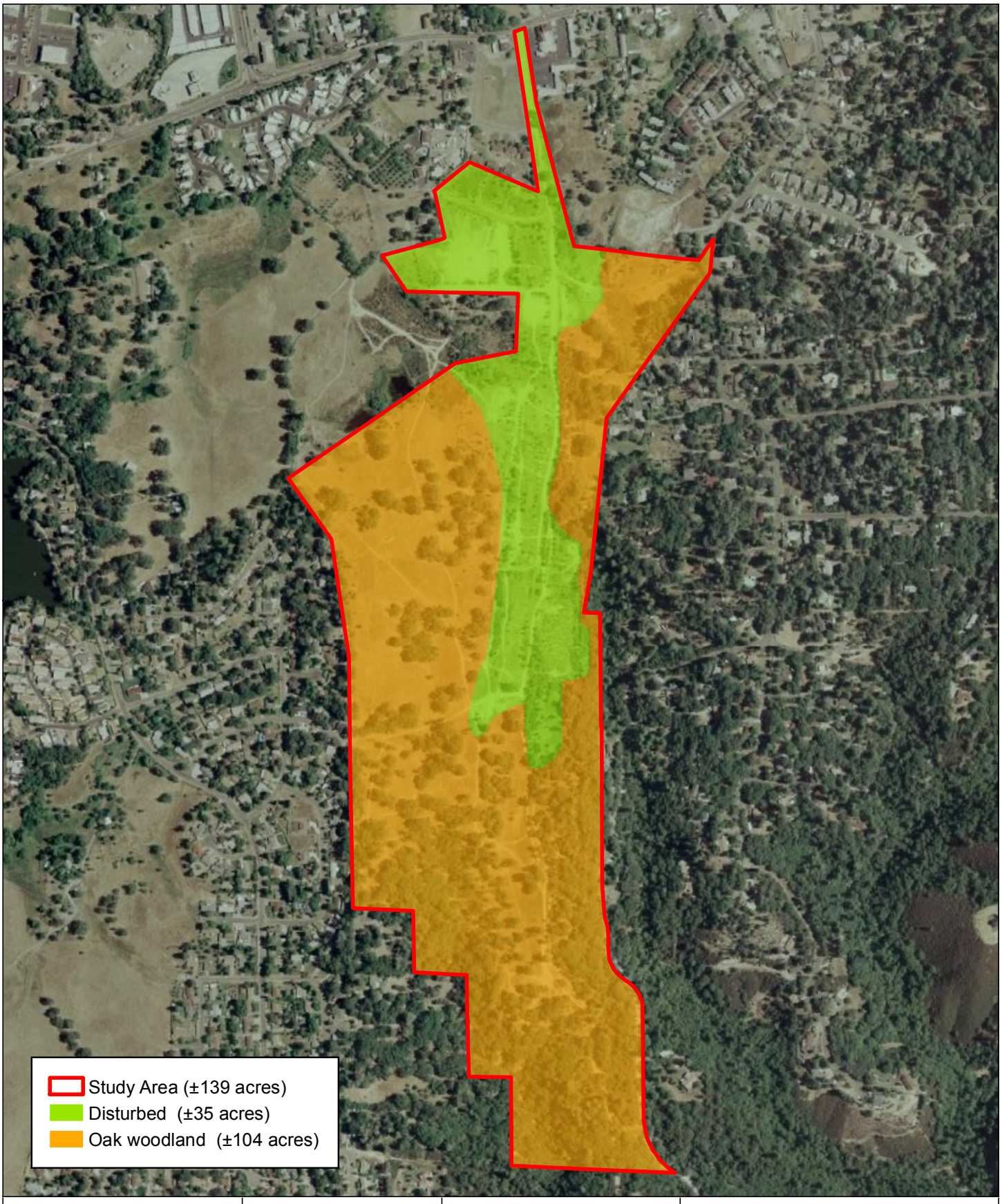
Two biological communities were identified within the study area: oak woodland and disturbed. Small amounts of wetland vegetation are embedded in these larger habitat types, associated with the onsite wetlands and streams. Table 1 presents estimated acreage of each habitat type. Figure 3 is a habitat map and Figure 4 shows photos of the site.

Table 1.
Biological Communities Present Within the Stonehenge Study Area

Biological Community	Estimated Acreage
Oak woodland	104
Disturbed	35
Total	139

Plants

The oak woodland habitat of the study area consists of a variety of oak species, with interior live oak, black oak, and blue oak in the dryer areas and valley oak near the intermittent drainage. Two species of pines, ponderosa pine and foothill pine, are scattered through this habitat type as well. For the most part this habitat type lacks a shrub layer, but does have some scattered areas of varying densities of whiteleaf manzanita, coyote brush, buck brush, Himalayan blackberry and poison oak. In general, the understory is dominated by ruderal grass and forb species including yellow star-thistle, hedgehog dogtail grass, Klamathweed, Spanish-clover, soft chess, medusa-head grass, Italian thistle, vetch, and field hedge-parsley. In the southeastern portion of the study area, a dense chaparral understory is intermixed within the oak woodland habitat composed of smaller interior live oaks, large black oaks, and foothill pines. Chaparral species present in this area include whiteleaf manzanita, chamise, coyote brush, buck brush, and yerba santa. The oak woodland onsite can be classified as blue oak-foothill pine habitat as defined by the El Dorado County Vegetation Bioclassification.



north fork associates

N

0 200 400 800

Scale in Feet

NOTES:
Aerial Photo Date: 2007 (ESRI)

Figure 3

HABITAT MAP

Stonehenge Study Area

El Dorado County, California



4a. Open oak woodland habitat.



4b. Ruderal grassland habitat.



4c. Intermittent stream located along eastern study area boundary.

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Photo Date: August 10 & 30, 2007

Figure 4

SITE PHOTOS
Stonehenge Site
El Dorado County, California

The disturbed habitat consists of areas with evidence of persistence disturbance. Scattered patches of short-stature ponderosa pines and whiteleaf and Nissenan manzanita shrubs are present throughout. A similar flora as the one found in the oak woodland habitat of ruderal grass and forb species is present in the disturbed habitat. Additionally, several areas within this habitat are unvegetated to sparsely vegetated. Portions of the disturbed habitat can be classified as whiteleaf manzanita chaparral under the El Dorado County Vegetation Bioclassification.

Wildlife

The Stonehenge study area provides important habitat features for wildlife including: nesting sites, escape and thermal cover, and a variety of food sources. In addition, aquatic habitats of the study area, including ponds and intermittent drainages, provide both seasonal and year-round sources of water for wildlife of the area. Woodland communities, such as those located throughout the site, are important for animal cover and provide roosting and nesting opportunities for birds and shelter for mammals. Scattered taller trees of the site provide suitable nesting habitat for raptors such as great horned owl, red-tailed hawk, and red-shouldered hawk.

The following animals were observed in association with grassland and woodland habitats of the study area during the August 2006 and May 2008 field surveys: western scrub-jay, acorn woodpecker, California quail, northern flicker, mourning dove, lesser goldfinch, wrentit, dark-eyed junco, California towhee, northern mockingbird, house finch, western kingbird, western fence lizard, southern alligator lizard, black-tailed jackrabbit, Western gray squirrel, and California ground squirrel. Sign of mule deer, coyote, raccoon, and Botta's pocket gopher were observed in both woodland and grassland habitats of the site. In addition, turkey vultures were observed soaring over the study area throughout the field surveys. Birds observed within or near the two ponds located along the western study area boundary included: green heron, great egret, great blue heron, red-winged blackbird, killdeer, and mallard.

At the time of the August 25, 2006 field survey, numerous bullfrogs were observed in the two ponds located along the western study area boundary. Three pond turtles were also observed in the eastern-most pond during the field survey. A complete list of species observed during the August 2006 and May 2008 field surveys is provided in Appendix B.

Regulated Habitats

The following habitats are considered regulated by Federal, State, or County laws and ordinances.

Waters of the U.S.

Waters of the United States in the Stonehenge study area consist of ephemeral streams, intermittent streams, ponds, fringe wetlands, seasonal wetlands, and wetland swales. A wetland delineation for approximately 115 acres of the overall site was conducted in August 2006, January 2007, and June 2008 by North Fork Associates and was verified by the U. S. Army Corps of Engineers (Corps) on August 18, 2008. The additional 24 acres

(to total 139 acres) was surveyed in May 2009 and will be submitted to the Corps for verification.

Per the El Dorado County Interim Interpretive Guidelines, Policy 7.3.3.4 requires a minimum setback of 100 feet from perennial streams, rivers, and lakes, and a 50-foot setback from intermittent streams and wetlands. The project site has water features as described in the El Dorado County Interim Interpretive Guidelines.

Streams, Ponds, and Riparian Habitats

Ponds, ephemeral streams, and one intermittent stream are present in the study area. Riparian habitat is not associated with any of the water features present onsite.

Oak Woodland, Oaks and Other Trees

The El Dorado General Plan conservation and open space element (Policy # 7.4.4.4) considers any native oak tree of 6 inches dbh (diameter at breast height) or an aggregate of 10 inches dbh to be a regulated tree. According to the El Dorado County General Plan for new development projects canopy retention values are based upon a baseline aerial photograph analysis of existing canopy and have predetermined retention values based upon existing canopy.

Special-Status Species

Appendix C provides a list of potentially occurring special status plants known to occur in the region surrounding the study area, and Appendix D provides a similar list of special status wildlife. The U.S. Fish and Wildlife Service list for El Dorado County includes species from the Central Valley to the east side of the Sierra Nevada. Species requiring habitats not occurring in or around the study area and species occurring far outside the study area are not considered in Appendix C or Appendix D. Field surveys and the best professional judgment of North Fork Associates biologists were used to further refine the tables in these appendices. In general, plants on the CNPS List 3 are not considered further.

The refined list of status species in the region of the Stonehenge study area includes 15 plants and eight animals (Appendix C and Appendix D, respectively). Of the 15 plant species in Appendix C and eight animal species in Appendix D, eight plants and five animals occur or have some potential to occur because the study area has some areas of suitable habitat or they are known from nearby locations. Table 2 provides a summary of these species, and they are discussed in more detail in the paragraphs following the table.

Table 2. Special-Status Species That Could Occur Within the Stonehenge Study Area

Species	Status* Federal	State	CNPS	Habitat	Potential for Occurrence**
Plants					
Brandegee's clarkia *Clarkia biloba* subsp. *brandegeeae*	-	-	1B.2	Chaparral and woodlands	Possible. Suitable habitat occurs in the study area.
El Dorado County mules ears *Wyethia reticulata*	-	-	1B.2	Chaparral; cismontane woodland; lower montane coniferous forest; [clay or gabbroic].	Possible. Suitable habitat occurs in the study area.
Nissenan manzanita *Arctostaphylos nissenana*	-	-	1B.1	Closed-cone coniferous forest; chaparral.	Occurs.
Northern California black walnut *Juglans hindsii*	-	-	1B.1	Riparian forests and Riparian woodlands.	Occurs.
Oval-leaved viburnum *Viburnum ellipticum*	-	-	2.3	Chaparral; cismontane woodland; lower montane coniferous forest.	Possible. Limited suitable habitat occurs in the study area.
Parry's horkelia *Horkelia parryi*	-	-	1B.2	Chaparral; cismontane woodland; [especially Ione formation]	Possible. Suitable habitat occurs in the study area.
Pine Hill ceanothus *Ceanothus roderickii*	FE	CR	1B.2	Chaparral; cismontane woodland; [often serpentinite or gabbroic].	Possible. Suitable habitat occurs in the study area.
Pleasant Valley mariposa lily *Calochortus clavatus* var. *avius*	-	-	1B.1	Lower montane coniferous forest, (Josephine silt loam and volcanic)	Possible. Suitable habitat occurs in the study area.
Species	**Status* Federal**	**State**	**Other**	**Habitat**	**Potential for Occurrence****
Amphibians					
California red-legged frog *Rana aurora draytonii*	FT	CSC	-	Ponds and deeper sections of streams with emergent or overhanging vegetation.	Possible – Potential habitat occurs in association with two ponds along western study area boundary.

Species	Status* Federal	State	CNPS	Habitat	Potential for Occurrence**
Reptiles					
Northwestern pond turtle *Actinemys marmorata marmorata*	-	CSC	-	Ponds, marshes, river, streams and ditches with basking sites and vegetation.	Occurs – Suitable habitat in ponds along western study area boundary. Three turtles observed in eastern-most pond during 2006 field survey.
Birds					
Cooper's hawk (nesting) *Accipiter cooperii*	-	WL	-	Dense stands of oak woodland, riparian forest or other forested habitats near water.	Possible – Potential nesting and foraging habitat occurs in onsite woodlands.
Tricolored blackbird (nesting colonies) *Agelaius tricolor*	-	CSC	-	Open water areas with tall emergent vegetation or in willow and blackberry thickets.	Possible– Limited amount of potential nesting habitat occurs near ponds in western portion of site.
Mammals					
Silver-haired bat *Lasionycteris noctivagans*	-	CSC	-	Occurs in coniferous forests, oak woodland and riparian habitats. Roosts in hollow trees, snags, buildings, rocks.	Possible-Limited roosting habitat associated with tree cavities on site. No significant roosting activity expected to occur.

Species	Status* Federal	State	CNPS	Habitat	Potential for Occurrence**

*Status Codes:

Federal

FE	Federal Endangered
FT	Federal Threatened
FP	Federal Proposed Species

State

CE	California Endangered
CT	California Threatened
CR	California Rare (plants only)
CSC	California Species of Concern
CFP	California Fully Protected
WL	CDFG "watch list" species

CNPS

List 1B	Rare, Threatened, or Endangered in California
List 2	R, T, or E in California, more common elsewhere
	1- Seriously threatened in California
	2- Fairly threatened in California
	3- Not very threatened in California

**Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Plants

Fifteen special status plant species are documented by the CNDDB (CDFG, 2008) and other pertinent references as occurring in the broader project region (refer to *Appendix C*). Most of the species listed by the CNDDB as occurring within the region are commonly associated with gabbro soils or serpentine soils which do not occur in the study area. Eight species listed by the CNDDB were determined to have a low to moderate potential for occurring on site, and are described below.

Brandegee's clarkia (*Clarkia biloba* subsp. *brandegeeae*) is an erect annual member of the evening primrose family (Onagraceae). It has no state or federal status, but it is a CNPS List 1B.2. Brandegee's clarkia differs from similar species by having pendant buds, notched petals, and eight stamens. It can be found in oak woodlands in the Sierra foothills from Butte County to El Dorado County. Its common name, farewell-to-spring suggests its late blooming period, usually from May to July.

During the floristic surveys, only the common *Clarkia purpurea* and *Clarkia biloba* ssp. *biloba* were observed and not Brandegee's clarkia.

El Dorado County mules-ears (*Wyethia reticulata*) is a perennial member of the sunflower family (Asteraceae). It is a CNPS List 1B.2. El Dorado County mules-ears is distinct from other species in the area by lacking basal leaves and having many narrow outer phyllaries. It grows in chaparral, foothill woodland, and sometimes lower montane coniferous forest on clay and gabbro-derived soils. It is endemic to El Dorado County and blooms from May to July.

While suitable habitat occurs in the study area, El Dorado County mules-ear was not observed during the floristic surveys.

Nissenan manzanita (*Arctostaphylos nissenana*) is a two- to six-foot shrub in the heath family (Ericaceae) that appears on the CNPS List 1B.1. It differs from the much more common and widespread whiteleaf manzanita (*Arctostaphylos viscida*) in several respects: (1) Nissenan manzanita has a cylindrical rather than a round or ovoid fruit; (2) Nissenan manzanita fruits have two to five stones, whereas whiteleaf manzanita has eight to ten stones; (3) Nissenan branches have fibrous bark as opposed to smooth bark; and (4) Nissenan manzanita is much smaller (two to five feet tall) and more compact than whiteleaf manzanita (three to 15 feet tall). Nissenan and whiteleaf manzanitas hybridize where they grow together. Preferred habitat for the species is closed-cone coniferous forest or chaparral in El Dorado and Tuolumne Counties.

Sixty-two individuals of Nissenan manzanita were observed during the floristic surveys (See Figure 5). Most of the plants occurred within the disturbed habitat. Two individuals were located in oak woodland habitat near the southern study area boundary.

Oval-leaved viburnum (*Viburnum ellipticum*) is three- to 12-foot shrub in the honeysuckle family (Caprifoliaceae). It has no state or federal status. It is a CNPS List 2.3, meaning that it is rare in California, but more common elsewhere. It is differentiated from other members of the family by its simple, coarsely dentate leaves. It grows in chaparral, foothill woodlands, and lower montane forests at widely scattered locations in the Sierra Nevada and northern Coast Ranges of California. Viburnum is much more common and widespread from Oregon north. Oval-leaved viburnum blooms in May and June.

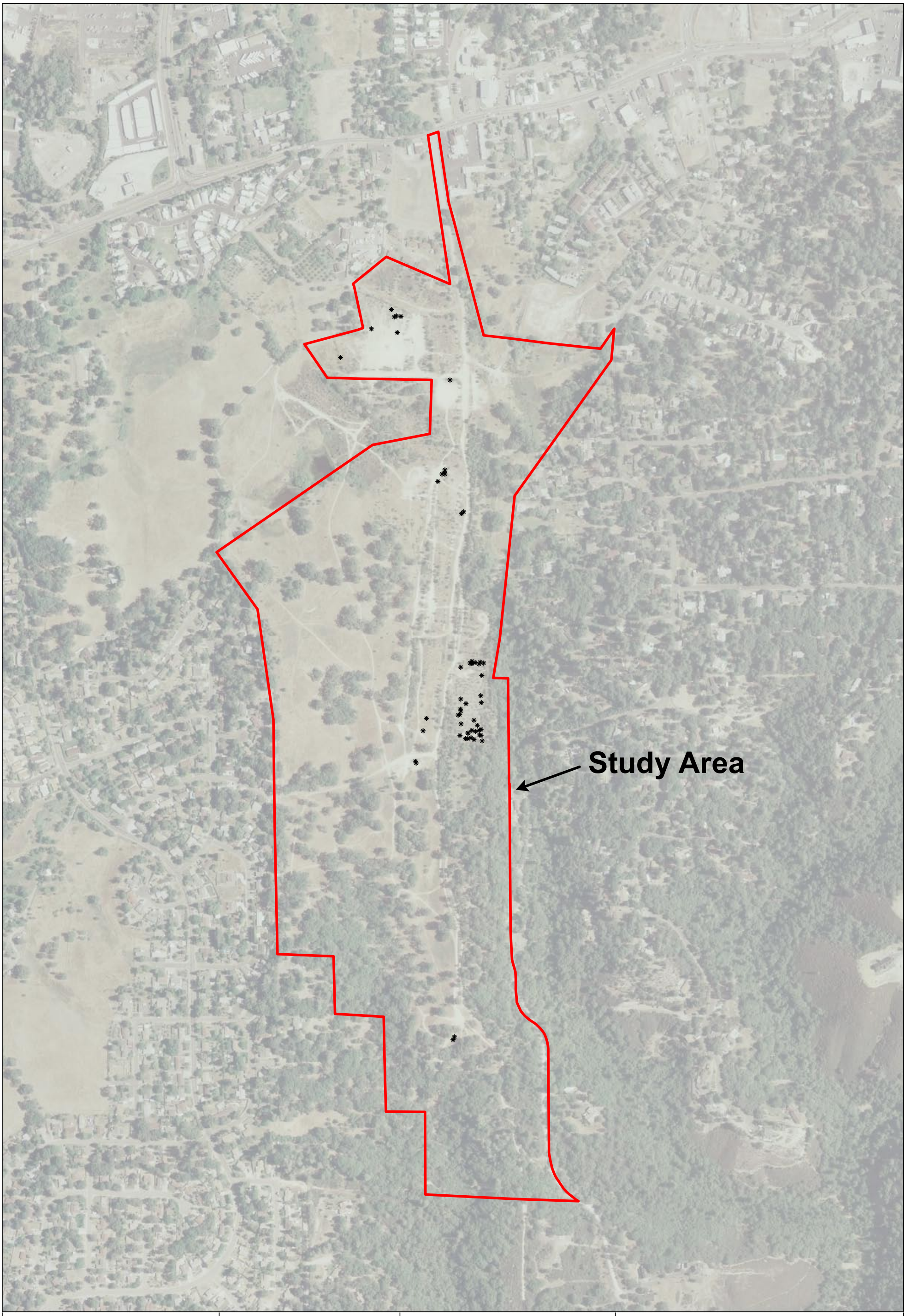
While suitable habitat occurs in the study area, oval-leaved viburnum was not observed during the field study.

Parry's horkelia (*Horkelia parryi*) is an aromatic, mat-forming perennial member of the rose family (Rosaceae). It has no state or federal status, but it is listed on CNPS List 1B.2. Parry's horkelia has white flowers typical of similar species, but the pedicels are curved when in fruit. It grows in chaparral and foothill woodlands from El Dorado County to Mariposa County, where it is often associated with the Ione Formation, and it blooms between April and June.

While suitable habitat occurs in the study area, Parry's horkelia was not observed during the floristic surveys.

Pine Hill ceanothus (*Ceanothus roderickii*) is a prostrate shrub in the buckthorn family (Rhamnaceae). It is a state-listed rare species and a federally-listed endangered species that also appears on CNPS List 1B.2. It differs from other similar species in having a fully prostrate habit, sub-erect leaves, and white flowers with a blue tinge. In addition, this species is restricted to serpentinite or gabbro soils, and occurs only in the Pine Hill area of El Dorado County. It blooms in May and June.

While suitable habitat occurs in the study area, Pine Hill ceanothus was not observed during the floristic surveys.



north fork associates

N

0 250 500

Scale in Feet

✱ Arctostaphylos nissenana (62 plants)

Aerial Photo Date: 2007 (ESRI)

Figure 5

SPECIAL-STATUS PLANT LOCATIONS

Stonehenge Study Area

El Dorado County, CA

Pleasant Valley mariposa lily (*Calochortus clavatus* var. *avius*) is bulb-forming member of the lily family (Liliaceae). It is listed on CNPS List 1B.1 with no state status. This species has a zigzag stem and yellow or gold petals that lack exterior green stripes. In addition, the nectary is densely covered with knobby hairs. Pleasant Valley mariposa lily grows in mixed oak and pine forests and has a preference for Josephine silt loams. It occurs in the foothills between El Dorado and Mariposa Counties, and it blooms from May to July.

While suitable habitat occurs in the study area, Pleasant Valley mariposa lily was not observed during the field study.

Northern California black walnut (*Juglans hindsii*) is a nut-bearing tree in the walnut family (Juglandaceae). This variety is a CNPS List 1B.1 species with no state or federal status. Its smooth shell distinguishes it from the non-native black walnut (*Juglans nigra*), which has a deeply ridged and furrowed shell. Northern California black walnut is known to occur natively at only a few locations. It has been used as rootstock for the cultivated English or Persian walnut (*Juglans regia*), and it now grows fairly widely in the Central Valley and adjacent coast range. It occurs naturally in canyons and creek bottoms, but is more often found now along streams, canals, and other waterways. Although this species was detected in the study area it is likely that it is not a naturally occurring population, but an escaped root stock variety and no mitigation should be required.

Wildlife

California red-legged frog (*Rana aurora draytonii*), a federally-listed threatened species and a California species of special concern, historically ranged from Marin County southward to northern Baja California. This species is still locally abundant within portions of the San Francisco Bay area and along the central coast. Only isolated populations of California red-legged frog (CRLF) have been documented in the Sierra Nevada and foothills region. CRLF prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 0.7 meters (2.3 feet), and the presence of fairly sturdy underwater supports such as cattails. The largest densities of CRLF are typically associated with dense stands of overhanging willows and a fringe of sturdy emergent vegetation (USFWS, 2006). CRLF typically breeds from January to July, with peak breeding occurring in February. Eggs are attached to subsurface vegetation, and hatched tadpoles require eleven to twenty weeks to metamorphose.

There are no occurrences of CRLF previously reported from the 9 quadrangle region surrounding the project site (CNDDB 2008). The closest documented occurrences of CRLF are reported from the east side of Folsom Lake, approximately 15 miles west of the study area (occurrence no. 814) and from just upstream of Weber Reservoir, approximately 7.5 miles east of the project site (occurrence no. 586) (CNDDB 2008). There is some potential for CRLF to occur in the study area due to the presence of a limited amount of suitable habitat and the site's location within the known range of the species. Suitable habitat is, however, limited to the two ponds located along the western property boundary. The eastern-most pond appears to retain surface water throughout

the dry season and contains good vegetative cover around the perimeter. Both ponds contained numerous bullfrogs, a predator of CRLF, at the time of the August 2006 field survey. However, the presence of bullfrogs does not always exclude CRLF from occurring at a site (USFWS, 2005). While the two on-site ponds provide some habitat components considered suitable for CRLF, the potential for occurrence within the study area is expected to be low due to the distance from other known populations.

Northwestern pond turtle (*Actimemys marmorata marmorata*), a California species of special concern, occurs in association with streams, rivers, and ponds containing suitable cover and basking sites. This subspecies can be associated with both permanent and ephemeral water sources, including perennial and intermittent streams. Suitable basking sites along streams or ponds include partially submerged logs, rocks, mats of floating vegetation, or open stream banks. Suitable upland habitat, such as sandy banks or grassy fields, located adjacent to the aquatic habitat is required for egg-laying. Nesting may take place in a variety of soil types from loose sandy soils to compact soils, and in a variety of habitat types. Eggs are laid from March to August, depending on local climate and water conditions. Incubation ranges from 73 to 80 days (Zeiner et al., 1988).

Within the study area, suitable habitat for northwestern pond turtle is limited to the two ponds located along the western study area boundary. During the August 2006 field survey, three pond turtles were observed in the eastern-most of the two ponds. Surface water depth was deeper in the eastern pond at the time of the field survey, and therefore more suitable for turtles. It is expected, however, that turtles could occupy either of the two ponds throughout other times of the year when surface water is deeper. No pond turtles were detected within either of the two ponds during the May 2008 field survey.

Cooper's hawk (*Accipiter cooperii*), a California Department of Fish and Game "watch list" species, is a breeding resident throughout most woodland habitats of California. Breeding takes place in dense-canopied trees from foothill pine-oak woodlands up to ponderosa pine forest. Nesting sites are usually located near water. This species hunts in broken woodland and habitat edges, where they catch small birds in the air. They prefer nesting sites in riparian growths of deciduous trees, as in canyon bottoms and on river flood plains, although live oaks are often used. Breeding takes place from March through August, with peak activity occurring in May and June. Cooper's hawk nests are often constructed in deciduous trees in crotches approximately 20 to 50 feet above ground. The nest is a stick platform lined with bark. This species incubates eggs for about 35 days, and young are fledged between 30 to 34 days. Young birds often remain in the vicinity of the nest after they fledge, while they are learning to hunt.

Cooper's hawk was not observed onsite during the field assessment. However, potential foraging and nesting habitat for the species occurs throughout the study area and adjacent woodland areas. This species prefers nesting in riparian woodland habitats, but is also known to nest in oaks near water. The study area may therefore provide marginal quality nesting habitat for this species.

Tricolored blackbird (*Agelaius tricolor*) a California species of special concern, is a highly colonial species that primarily nests in freshwater emergent wetlands. Nesting colonies

of this species are considered sensitive by the California Department of Fish and Game. This species generally requires open water, with protected nesting habitat, and suitable foraging areas close to the colony. Breeding and nesting typically take place in dense cattails or tules and may also occur in thickets of willow, blackberry, wild rose, and tall herbs. Nests are usually located a few feet over or near freshwater. Nesting areas must be large enough to support a minimum colony of about 50 pairs (Zeiner et al., 1990a). Colonies may vary in size from about 50 nests to over 20,000 in an area of ten acres or less. The breeding season is typically mid-April through late July. Incubation takes about 11 days, and young leave the nest at about 13 days.

The closest previously documented occurrence of tricolored blackbird nesting is from approximately six miles northwest of the study area, near Gold Hill Road (CNDDB, 2008). Within the study area, a limited amount of suitable nesting habitat occurs in association with freshwater marsh vegetation and blackberry thickets located adjacent to the two ponds. Based on the presence of suitable nesting habitat, this species is expected to have a reasonable potential for nesting within the study area.

Silver -haired bat (*Lasionycteris noctivagans*) is a common species throughout California, but fluctuates significantly in abundance (Zeiner et al., 1990b). It occurs in coastal and montane coniferous forest, oak woodland, and riparian habitats. This species roosts in hollow trees, snags, buildings, rock crevices, in caves, and under bark of trees. Females can form nursery colonies or roost as solitary individuals in hollow trees or dense foliage. Mating primarily occurs in the fall. Young are born from May through July and are weaned at about six weeks (Zeiner et al., 1990b).

There is only one documented occurrence of silver-haired bat in the region surrounding the study area (CNDDB, 2008). This occurrence is from approximately six miles northeast of the study area along the South Fork of the American River, in an area with dense willow thickets and steep-walled cliffs. The study area may provide periodic foraging habitat for the species and limited suitable roosting habitat for individuals in onsite woodlands. However, no significant roosting activity or nursery colonies are expected to occur on site.

RECOMMENDATIONS

Waters of the United States

The study area has areas considered waters of the United States. Activities that affect these areas would require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. The project would also need to obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act. The Corps and the Regional Board would add conditions to the permits that would stipulate the appropriate mitigation, which could include one or more of the following: on site creation, offsite creation, purchase of credits in a mitigation bank, or payments to an in-lieu fund. The precise mitigation and monitoring requirements would depend on the extent of impacts.

Streams, Pond, and Riparian Habitat

Impacts to the bed, bank, or channel of streams or ponds would require a Streambed Alteration Agreement with the California Department of Fish and Game (CDFG). Impacts to the riparian habitat may require a Streambed Alteration Agreement with the CDFG.

Oak Woodland, Oaks and Other Trees

An oak canopy analysis per the El Dorado County General Plan may be required.

Special-Status Plants

Floristic surveys were conducted in accordance to the California Fish and Game guidelines. Approximately 62 Nissenan manzanita individuals were observed during surveys. No other special-status plant species were observed and no further special-status plant surveys are recommended.

Special-Status Wildlife

The two ponds located along the western study area boundary may provide suitable habitat for California red-legged frog. Disturbance of the pond or adjacent vegetation could therefore result in adverse impacts to individuals that may occupy suitable aquatic habitat of the site. Potential disturbance can be avoided, however, through implementation of appropriate protective measures. All disturbance of potential habitat for California red-legged frog, including the two ponds and adjacent vegetation, should be avoided to the extent feasible. In the event that disturbance of aquatic habitat cannot be avoided, a *California Red-legged Frog Habitat Assessment* (USFWS, 2005) should be prepared and submitted to the U.S. Fish and Wildlife Service Sacramento Field Office. The applicant should then contact the U.S. Fish and Wildlife Service to determine if follow-up surveys and avoidance measures are required.

The two ponds located along the western study area boundary provide suitable habitat for northwestern pond turtle. Occurrence of this species was confirmed through direct observation during the August 2006 field survey. Any disturbance of the ponds or adjacent upland habitat should therefore be avoided to the extent feasible. In the event that disturbance cannot be avoided, the California Department of Fish and Game should be contacted immediately to determine appropriate avoidance measures and additional mitigation responsibilities.

Based on the presence of marginal quality nesting and foraging habitat, Cooper's hawk is expected to have some potential for occurring in the study area. Project implementation could therefore result in disturbance of breeding and nesting of this species if construction occurs at any time during the typical breeding season (approximately March 1 through August 31). Nesting of other raptors known from the region, including red-shouldered hawk and red-tailed hawk, could also be adversely affected if construction takes place during the identified breeding/nesting season. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5. To avoid take of active raptor nests, pre-construction surveys should be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development

activities. Survey results should then be submitted to the California Department of Fish and Game. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated with the California Department of Fish and Game to determine appropriate avoidance measures.

Suitable nesting habitat for tricolored blackbird occurs in the vicinity of the two ponds located along the western study area boundary. Depending on the timing of construction, site disturbance could result in disturbance of breeding and nesting activity of this species. According to the California Department of Fish and Game Code 3503, "take" of the nest or eggs of any bird is prohibited, except upon approval from the California Department of Fish and Game. Disturbance of active nests can be avoided during construction through appropriate measures. To the extent feasible, ground disturbance and removal of vegetation should be avoided in the vicinity of the ponds during the typical breeding and nesting period for this species (approximately April through July). If construction activities cannot be avoided during the typical breeding season, the applicant should retain a qualified biologist to conduct a pre-construction survey (approximately one week prior to construction) to determine presence/absence of active nests. If no nesting activities are detected within proposed work areas, construction activities may proceed. If, however, active nests are found, construction should be avoided until after the young have fledged from the nest and achieved independence, or upon approval from the California Department of Fish and Game.

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Appendix A.
Plant Species Observed Within the Stonehenge Study Area

Appendix A

Plant Species Observed Within the Stonehenge Study Area

Ferns and Allies

Pteridaceae

Pentagramma triangularis subsp. triangularis	Goldback fern

Gymnosperms

Pinaceae

Pinus ponderosa	Pacific ponderosa pine
Pinus sabiniana	Foothill pine

Angiosperms - Dicots

Amaranthaceae

**Amaranthus sp.*	Amaranthus

Anacardiaceae

Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae)

**Anthriscus caucalis*	Bur-chervil
**Daucus carota*	Queen Anne's lace
Daucus pusillus	Rattlesnake weed
Eryngium castrense	Coyote-thistle
Sanicula bipinnata	Poison sanicle
Sanicula bipinnatifida	Purple sanicle
Sanicula crassicaulis	Gamble weed
**Torilis arvensis*	Field hedge-parsley

Apocynaceae

Asclepias cordifolia	Purple milkweed
Asclepias sp.	Milkweed

Asteraceae (Compositae)

Achillea millefolium	Common yarrow
Agoseris grandiflora	Large-flower agoseris
Agoseris retrorsa	Spear-leaf agoseris
Agoseris sp.	Agoseris
Artemisia douglasiana	California mugwort
Baccharis pilularis	Coyote brush
Calycadenia sp.	Calycadenia
**Carduus pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow starthistle
Centromadia fitchii	Fitch's spikeweed
**Chondrilla juncea*	Skeleton weed
**Cichorium intybus*	Chicory
**Cirsium vulgare*	Bull thistle
Eriophyllum lanatum	Woolly sunflower

Gnaphalium palustre	Western marsh cudweed
Grindelia hirsutula	Gumplant
Holocarpha virgata subsp. virgata	Virgate tarweed
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
Jensia rammii	Ramm's madia
**Lactuca serriola*	Prickly lettuce
**Leontodon saxatilis*	Long-beaked hawkbit
Lessingia nemaclada	Lessingia
**Logfia gallica*	Narrowleaf cottonrose
Madia elegans	Common madia
Madia exigua	Threadstem madia
Madia gracilis	Slender tarweed
Madia subspicata	Foothill tarweed
Matricaria discoidea	Pineapple-weed
Micropus californicus subsp. californicus	Cottontop
Pseudognaphalium benolens	Everlasting
Pseudognaphalium californicum	California everlasting
Psilocarphus brevissimus var. brevissimus	Dwarf woolly-heads
Psilocarphus tenellus var. globiferus	Round woolly-marbles
Psilocarphus tenellus var. tenellus	Slender woolly-marbles
**Silybum marianum*	Milk thistle
Solidago velutina subsp. californica	California goldenrod
**Soliva sessilis*	Field burrweed
**Sonchus asper*	Prickly sow-thistle
**Tragopogon dubius*	Yellow salsify
**Tragopogon porrifolius*	Common salsify
Wyethia angustifolia	Narrowleaf mules ears
Wyethia helenioides	Gray mules ears
Wyethia sp.	Mule's ears
Xanthium strumarium	Cocklebur

Boraginaceae

Amsinckia menziesii	Common fiddlneck
Eriodictyon californicum	California yerba santa
Nemophila heterophylla	White nemophila
Pectocarya pusilla	Pectocarya
Phacelia sp.	Phacelia
Plagiobothrys nothofulvus	Rusty popcornflower
Plagiobothrys stipitatus var. micranthus	Stipitate popcornflower

Brassicaceae (Cruciferae)

**Hirschfeldia incana*	Short-podded mustard
Lepidium oblongum var. oblongum	Wayside peppergrass
**Nasturtium officinale*	Water cress
Rorippa curvisiliqua	Western yellow cress
Thysanocarpus curvipes	Lacepod
Thysanocarpus radians	Spoke-pod

Caprifoliaceae

Lonicera interrupta	Chaparral honeysuckle
Symphoricarpos mollis	Creeping snowberry

Caryophyllaceae

**Cerastium glomeratum*	Mouse-ear chickweed
**Scleranthus annuus subsp. annuus*	Annual knawel
**Silene gallica*	Windmill-pink
**Spergularia rubra*	Ruby sand-spurrey
**Stellaria media*	Common chickweed

Convolvulaceae

Calystegia occidentalis	Morning-glory
**Convolvulus arvensis*	Bindweed

Crassulaceae

**Crassula tillaea*	Mossy pygmy-weed

Cucurbitaceae

Marah oreganus	Coast man-root

Ericaceae

Arctostaphylos nissenana	Nissenan manzanita
Arctostaphylos viscida	Whiteleaf manzanita

Euphorbiaceae

Croton setigerus	Turkey mullein
**Euphorbia lathyris*	Caper spurge

Fabaceae (Leguminosae)

**Lathyrus cicera*	Wild-pea
Lathyrus sulphureus var. sulphureus	Snub pea
**Lotus corniculatus*	Birdfoot trefoil
Lotus micranthus	Hill lotus
Lotus purshianus var. purshianus	Spanish-clover
Lupinus albicaulis	Pine lupine
Lupinus bicolor	Miniature lupine
Lupinus formosus var. robustus	Lupine
Lupinus nanus	Sky lupine
**Medicago polymorpha*	California burclover
**Trifolium dubium*	Little hop clover
**Trifolium glomeratum*	Clover
**Trifolium hirtum*	Rose clover
**Trifolium repens*	White clover
**Trifolium subterraneum*	Subterranean clover
Trifolium wormskioldii	Cow clover
**Vicia hirsuta*	Tiny vetch
**Vicia sativa*	Common vetch
**Vicia villosa*	Winter vetch

Fagaceae

Quercus chrysolepis	Canyon live oak
Quercus douglasii	Blue oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak
Quercus wislizeni var. wislizeni	Interior live oak
Quercus xmorehus	Oracle oak

Gentianaceae

Zeltnera muehlenbergii	June centaury

Geraniaceae

**Erodium botrys*	Broad-leaf filaree
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
Erodium sp.	Filaree
**Geranium dissectum*	Cut-leaf geranium
**Geranium molle*	Dove's-foot geranium

Hypericaceae

**Hypericum perforatum*	Klamathweed

Juglandaceae

Juglans hindsii	Northern California black walnut

Lamiaceae (Labiatae)

**Mentha pulegium*	Pennyroyal
Monardella candicans	Sierra monardella
Pogogyne serphylloides	Thyme-like mesamint
Scutellaria californica	California skullcap
Trichostema lanceolatum	Vinegar weed

Linaceae

**Linum usitatissimum*	Common flax

Lythraceae

**Lythrum hyssopifolia*	Hyssop loosestrife

Malvaceae

Sidalcea malviflora	Checker mallow

Myrsinaceae

**Anagalis arvensis*	Scarlet pimpernel

Onagraceae

Clarkia biloba subsp. biloba	Mule-ear clarkia
Clarkia purpurea	Winecup clarkia
Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum	Hairy willow-herb
Epilobium densiflorum	Dense-flower spike-primrose
Epilobium torreyi	Brook spike-primrose
Ludwigia peploides	Water-primrose

Orobanchaceae

Castilleja attenuata	Valley tassels
Castilleja lacera	Owl's clover
Triphysaria eriantha	Butter-and-eggs

Papaveraceae

Eschscholzia californica	California poppy
Eschscholzia lobbii	Fryingpan poppy

Phrymaceae

Mimulus aurantiacus	Sticky monkeyflower
Mimulus guttatus	Common monkeyflower

Plantaginaceae

Callitriche heterophylla var. heterophylla	Larger water-starwort
Collinsia heterophylla	Chinese houses
Gratiola ebracteata	Bractless hedge-hyssop
**Kickxia elatine*	Sharppoint fluvellin
Plantago erecta	Plantain
**Plantago lanceolata*	English plantain

Polemoniaceae

Allophyllum divaricatum	False gilia
Allophyllum gilioides subsp. gilioides	Blue false gilia
Gilia capitata	Globe gilia
Leptosiphon bicolor	Bicolored linanthus
Leptosiphon parviflorus	Linanthus
Navarretia intertexta subsp. intertexta	Needle-leaved navarretia
Navarretia squarrosa	Skunkweed

Polygonaceae

Eriogonum nudum	Nude buckwheat
Persicaria sp.	Smartweed
**Polygonum aviculare*	Common knotweed
Polygonum sp.	Polygonum
**Rumex acetosella*	Sheep sorrel
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock

Portulacaceae

Claytonia perfoliata	Miner's lettuce

Ranunculaceae

Delphinium hansenii subsp. hansenii	Hansen's larkspur
Delphinium variegatum subsp. variegatum	Royal larkspur
Ranunculus bonariensis var. trisepalus	Vernal pool buttercup
**Ranunculus muricatus*	Spiny-fruit buttercup
Ranunculus occidentalis	Western buttercup

Rhamnaceae

Ceanothus cuneatus var. cuneatus	Buck brush
Ceanothus integerrimus	Deer brush
Ceanothus lemmonii	Lemmon's ceanothus
Ceanothus tomentosus	Woollyleaf ceanothus
Frangula californica subsp. tomentella	Hoary coffeeberry
Rhamnus ilicifolia	Hollyleaf redberry

Rosaceae

Adenostoma fasciculatum	Chamise
**Cotoneaster sp.*	Cotoneaster
Heteromeles arbutifolia	Toyon
Horkelia californica subsp. dissita	California honey-dew
Potentilla glandulosa	Glandular cinquefoil
**Prunus cerasifera*	Cherry plum
**Pyracantha sp.*	Pyracantha
**Rosa sp.*	Wild rose
**Rubus discolor*	Himalayan blackberry

Rubiaceae

**Galium aparine*	Goose grass
**Galium parisiense*	Wall bedstraw
Galium porrigens var. tenue	Climbing bedstraw

Salicaceae

Populus fremontii subsp. fremontii	Fremont cottonwood
Salix exigua	Narrow-leaved willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow

Sapindaceae

Aesculus californica	California buckeye

Saxifragaceae

Lithophragma affine	Woodland star
Lithophragma bolanderi	Woodland star

Scrophulariaceae

Scrophularia californica	California figwort
**Verbascum blattaria*	Moth mullein
**Verbascum thapsus*	Woolly mullein

Simaroubaceae

**Ailanthus altissima*	Tree of heaven

Solanaceae

**Nicotiana sp.*	Tobacco

Valerianaceae

Plectritis macrocera	Short-spurred plectritis

Verbenaceae

Verbena lasiostachys var. lasiostachys	Western verbena

Violaceae

Viola purpurea subsp. quercetorum	Violet

Viscaceae

Phoradendron serotinum subsp. macrophyllum	Bigleaf mistletoe
Phoradendron serotinum subsp. tomentosum	Oak mistletoe

Angiosperms -Monocots

Agavaceae

Chlorogalum pomeridianum var. pomeridianum	Soap plant

Alismataceae

Alisma plantago-aquatica	Water plantain
Sagittaria latifolia	Broad-leaf arrowhead

Cyperaceae

Carex barbarae	Santa Barbara sedge
Carex praegracilis	Clustered field-sedge
Carex sp.	Sedge
Cyperus eragrostis	Tall flatsedge
Eleocharis macrostachya	Creeping spikerush

**Eleocharis pachycarpa*	Black sand spikerush
Schoenoplectus acutus var. occidentalis	Hard-stem tule

Iridaceae

Sisyrinchium bellum	Blue-eyed grass

Juncaceae

Juncus bufonius	Toad rush
Juncus mexicanus	Mexican rush
Juncus occidentalis	Slender rush
Juncus phaeocephalus	Brown-headed rush
Juncus xiphioides	Iris-leaf rush
Luzula comosa	Common wood-rush

Juncaginaceae

Lilaea scilloides	Flowering quillwort

Liliaceae

Calochortus albus	White globe lily
Calochortus monophyllus	Yellow mariposa lily

Poaceae (Gramineae)

**Aegilops triuncialis*	Barbed goatgrass
Agrostis exarata	Spike redtop
**Aira caryophyllea*	Silver European hairgrass
**Anthoxanthum odoratum*	Sweet vernal grass
**Avena barbata*	Slender wild oat
**Avena fatua*	Wild oat
**Avena sp.*	Oat
**Briza minor*	Small quaking grass
**Bromus catharticus*	Rescue grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus inermis subsp. inermis*	Smooth brome
**Bromus tectorum*	Cheat grass
**Crypsis schoenoides*	Swamp pricklegrass
**Cynodon dactylon*	Bermudagrass
**Cynosurus echinatus*	Hedgehog dogtail
**Dactylis glomerata*	Orchard grass
Deschampsia danthonioides	Annual hairgrass
Elymus glaucus	Blue wildrye
Elymus multisetus	Big squirreltail
**Gastridium phleoides*	Nit grass
**Glyceria declinata*	Waxy mannagrass
Glyceria x occidentalis	Western mannagrass
**Holcus lanatus*	Common velvet grass
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum*	Foxtail barley
**Lolium multiflorum*	Italian ryegrass
Melica californica	California melic
Nassella pulchra	Purple needlegrass
**Phalaris aquatica*	Harding grass
**Poa annua*	Annual bluegrass
**Poa bulbosa subsp. vivipara*	Bulbous bluegrass

Poa sp.	Bluegrass
**Polypogon monspeliensis*	Annual beard grass
**Taeniatherum caput-medusae*	Medusahead
**Vulpia bromoides*	Brome fescue
Vulpia microstachys	Small fescue
**Vulpia myuros*	Rattail fescue

Potamogetonaceae

Potamogeton sp.	Pondweed

Themidaceae

Brodiaea elegans subsp. elegans	Harvest brodiaea
Dichelostemma capitatum subsp. capitatum	Blue dicks
Dichelostemma multiflorum	Wild hyacinth
Dichelostemma volubile	Twining brodiaea
Triteleia hyacinthina	White brodiaea

Typhaceae

Typha latifolia	Broad-leaved cattail

Appendix B.
Wildlife Species Observed Within the Stonehenge Study Area

Appendix B.

Wildlife Species Observed Within the Stonehenge Study Area

Amphibians

Pacific chorus frog	*Pseudacris regilla*
Bullfrog	*Rana catesbeiana*

Reptiles

Northwestern pond turtle	*Actinemys marmorata marmorata*
Western fence lizard	*Sceloporus occidentalis*
Southern alligator lizard	*Elgaria multicarinata*

Birds

Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Green heron	*Butorides virescens*
Turkey vulture	*Cathartes aura*
Mallard	*Anas platyrhynchos*
California quail	*Callipepla californica*
Killdeer	*Charadrius vociferus*
Mourning dove	*Zenaida macroura*
Acorn woodpecker	*Melanerpes formicivorus*
Northern flicker	*Colaptes auratus*
Western kingbird	*Tyrannus verticalis*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Barn swallow	*Hirundo rustica*
Oak titmouse	*Baeolophus inornatus*
Wrentit	*Chamaea fasciata*
Northern mockingbird	*Mimus polyglottos*
California towhee	*Pipilo crissalis*
Dark-eyed junco	*Junco hyemalis*
Red-winged blackbird	*Agelaius phoeniceus*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*

Mammals

Western gray squirrel	*Sciurus griseus*
Black-tailed jackrabbit	*Lepus californicus*
California ground squirrel	*Spermophilus beecheyi*
Botta's pocket gopher	*Thomomys bottae*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Mule deer	*Odocoileus hemionus*

Appendix C.
Special-Status Plant Species Known to Occur in the Region of the Stonehenge Study Area

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Stonehenge Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae				
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: List 2.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	Possible. Limited suitable habitat occurs in the study area.
Agavaceae				
Chlorogalum grandiflorum Red Hills soaproot	Fed: - State: - CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. Habitat does not occur in the study area.
Asteraceae				
Packera layneae Layne's ragwort	Fed: FT State: CR CNPS: List 1B.2	April-July	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. Habitat does not occur in the study area.
Wyethia reticulata El Dorado County mules ears	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland; lower montane coniferous forest; [clay or gabbroic].	Possible. Suitable habitat occurs in the study area.
Cistaceae				
Helianthemum suffrutescens Bisbee Peark rush-rose	Fed: - State: - CNPS: List 3.2	April-June	Chaparral (often serpentinite, gabbroic, or Ione soil).	None. Habitat does not occur in the study area.
Convolvulaceae				
Calystegia stebbinsii Stebbins' false bindweed	Fed: FE State: CE CNPS: List 1B.1	May-June	Chaparral (openings); cismontane woodland; [serpentinite or gabbroic].	None. Habitat does not occur in the study area.

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Stonehenge Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Ericaceae				
Arctostaphylos nissenana Nissenan manzanita	Fed: - State: - CNPS: List 1B.2	February-March	Closed-cone coniferous forest; chaparral.	Occurs.
Juglandaceae				
Juglans hindsii Northern California black walnut	Fed: - State: - CNPS: List 1B.1	April-May	Riparian forest; riparian woodland.	Occurs.
Liliaceae				
Allium jepsonii Jepson's onion	Fed: - State: - CNPS: List 1B.2	May-August	Cismontane woodland; lower montane coniferous forest [serpentinite or volcanic]. 300 to 1160 meters.	None. Habitat does not occur in the study area.
Calochortus clavatus avius Pleasant Valley mariposa lily	Fed: - State: - CNPS: List 1B.2	May-July	Lower montane coniferous forest, (Josephine silt loam and volcanic).	Possible. Suitable habitat occurs in the study area.
Onagraceae				
Clarkia biloba brandegeeae Brandegee's clarkia	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland [often on roadcuts].	Possible. Suitable habitat occurs in the study area.
Rhamnaceae				
Ceanothus roderickii Pine Hill ceanothus	Fed: FE State: CR CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	Possible. Suitable habitat occurs in the study area.

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Stonehenge Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Rosaceae				
Horkelia parryi Parry's horkelia	Fed: - State: - CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; [especially Ione formation].	Possible. Suitable habitat occurs in the study area.
Rubiaceae				
Galium californicum sierrae Eldorado bedstraw	Fed: FE State: CR CNPS: List 1B.2	May-June	Chaparral; cismontane woodland; lower montane coniferous forest; [gabbroic].	None. Habitat does not occur in the study area.
Sterculiaceae				
Fremontodendron californicum decumbens Pine Hill flannelbush	Fed: FE State: CR CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; [gabbroic or serpentinite].	None. Habitat does not occur in the study area.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D.
Special-Status Wildlife Species Known to Occur in the Region of the Stonehenge Study Area

Appendix D.

Special-Status Wildlife Species Known to Occur in the Region of the Stonehenge Study Area

	Status*	Habitat	Probability on Project Site
Insects			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: FT State: - Other: *	Requires host plant, elderberry (Sambucus spp.) for most of its life cycle. Shrubs must have stem diameters at ground level of 1.0 inch or greater and shrubs must be found less than 3,000 feet in elevation.Typically riparian and upland associated.	None. No suitable habitat (elderberry plants) present onsite.
Amphibians			
California red-legged frog *Rana aurora draytonii*	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Possible. Marginal quality habitat occurs in association with two ponds located along western site boundary. Closest known occurrence is from approximately 12 miles east of the site, along the east side of Folsom Lake.
Foothill yellow-legged frog *Rana boylii*	Fed: - State: CSC Other: *	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. No suitable aquatic habitat observed within project site. Closely associated with steeper gradient streams with rocky substrate and some permanent surface water. Closest known occurrence is from Indian Creek, 10 miles northwest of site.
Reptiles			
Northwestern pond turtle *Actinemys marmorata marmorata*	Fed: - State: CSC Other: *	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires suitable basking sites and upland habitat for egg laying.	Occurs. Limited area of suitable habitat in two ponds located along western site boundary. Three pond turtles observed in eastern pond during field survey.
California horned lizard *Phrynosoma coronatum frontale*	Fed: - State: CSC Other: -	Found in a variety of habitats, but most common in sandy washes with scattered shrubs. Requires open areas for sunning, shrubs for cover, and sandy soil for hiding.	Unlikely. Marginal quality habitat on site. Prefers open habitats of lowlands, such as sandy washes and flood plains. No individuals observed within project site during field survey. Closest known occurrence is from 9 miles west of the project site.
Birds			
Cooper's hawk *Accipiter cooperii*	Fed: - State: WL Other: -	Breeds in deciduous, mixed, and coniferous forests. Becoming more common in suburban and urban areas. Occurs in open to interrupted woodland.	Possible. Suitable foraging and nesting habitat located throughout woodland areas of the project site. Known from project region.

Appendix D.

Special-Status Wildlife Species Known to Occur in the Region of the Stonehenge Study Area

	Status*	Habitat	Probability on Project Site
Northern goshawk *Accipiter gentilis*	Fed: - State: CSC Other: *	Dense, mature coniferous forests, most typically dense fir stands in the Sierra Nevada mountains.	Unlikely. No suitable habitat (dense, mature coniferous forest) present on site. Associated with coniferous forests at higher elevations.
Tricolored blackbird *Agelaius tricolor*	Fed: - State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Possible. Limited suitable nesting habitat occurs in vicinity of two ponds located along western site boundary.
Mammals			
Silver-haired bat *Lasionycteris noctivagans*	Fed: - State: CSC Other: -	Coniferous forests, oak woodland, and riparian habitats. Roosts in hollow trees, snags, buildings, and rocks. Migratory species.	Possible. Marginal quality habitat occurs in two ponds along western site boundary. Closest known occurrences are from approximately 15 miles west of the site, along east side of Folsom Lake, and 7.5 miles east, just upstream of Weber Reservoir."

***Status**

Federal:
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FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federal Proposed for Delisting

State:
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CT - California Threatened
CR - California Rare
CC - California Candidate
CFP - California Fully Protected
CSC - California Species of Special Concern

Other:
Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.

Aquatic Resources Delineation Report

for

Stonehenge Springs

El Dorado County, CA

SPK-200702110

Prepared by:

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6 February 2018

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Aquatic Resources Delineation Report
for
Stonehenge Springs

El Dorado County, CA

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I. INTRODUCTION

A. Purpose

Sycamore Environmental Consultants, Inc., conducted a delineation of aquatic resources for the Stonehenge Springs Biological Study Area (BSA) in El Dorado County. The purpose of the delineation was to identify wetlands and waters, and identify features that meet the definition of waters of the U.S. Verifications of the extent of waters of the U.S. may be made by the U.S. Army Corps of Engineers (Corps). Ultimate determination of the extent of waters of the U.S. may be determined by the Environmental Protection Agency (EPA).

B. Project Location

The north end of the BSA is at Faith Lane and Highway 49 in Diamond Springs, a census-designated place in El Dorado County, CA. The approximately 144-acre BSA is assessor's parcel numbers 054-402-18, 329-301-15, 329-301-20, 329-310-10, -11, and -12. The BSA is on the Placerville U.S. Geological Survey topographic quad (T10N, R10E, Section 25 and 36; T10N, R11E, Section 30 and 31; Figure 1), and is in the Upper Cosumnes hydrologic unit (18040013). Its centroid is 38.686355º north, 120.819115° west, UTM coordinate 689,690 meters E, 4,284,226 meters N, Zone 10N (WGS84). Figure 2 is an aerial photograph of the BSA.

To access the BSA from Sacramento, take Highway 50 east to the Missouri Flat Road exit. Turn right onto Missouri Flat Road, then left onto Pleasant Valley Rd. In 0.3 miles, Faith Lane, the northern end of the BSA, will be on the right.

C. Project Applicant

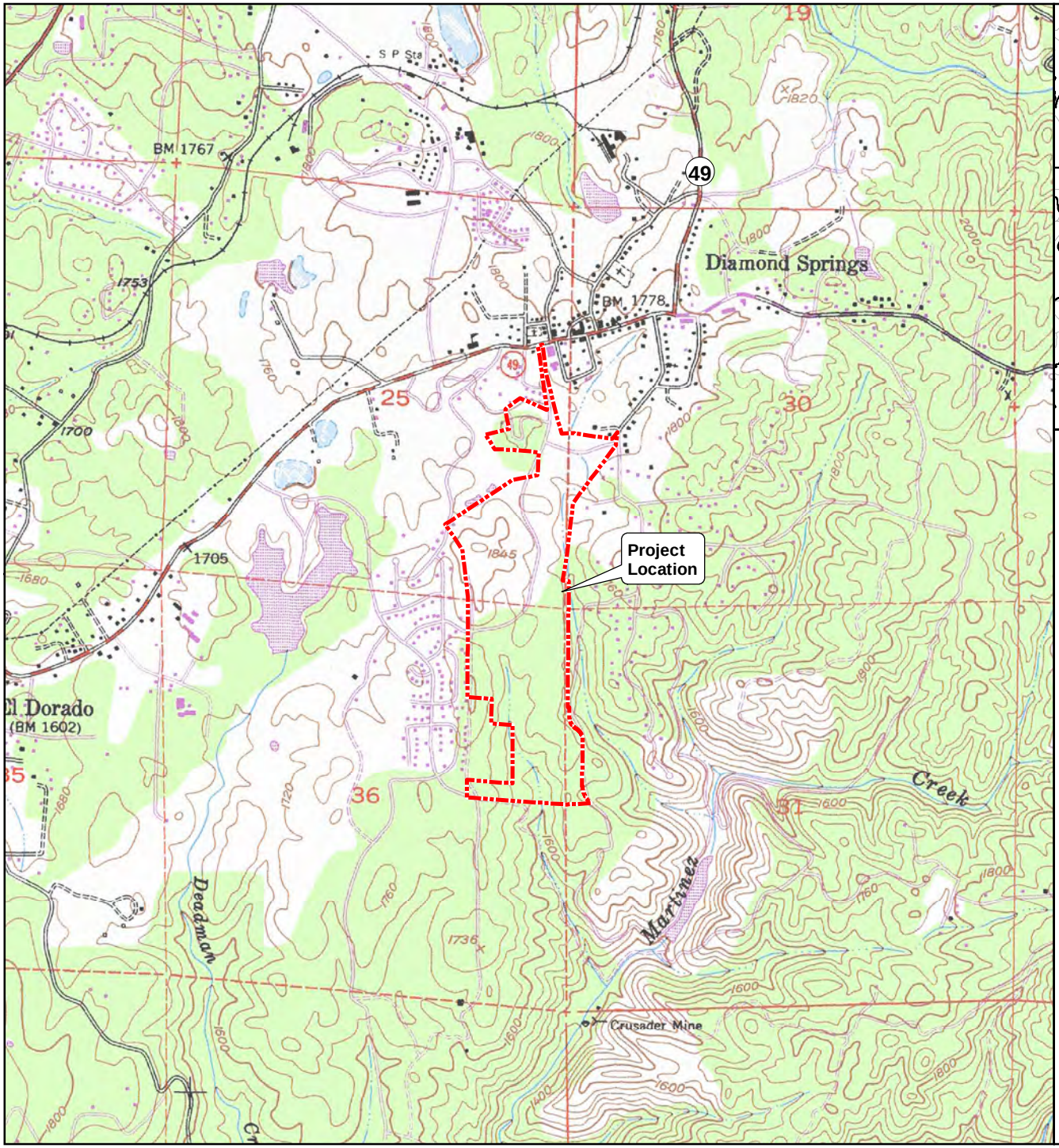
Stonehenge Springs, LLC
2700 South Azusa Avenue
West Covina, CA 91792

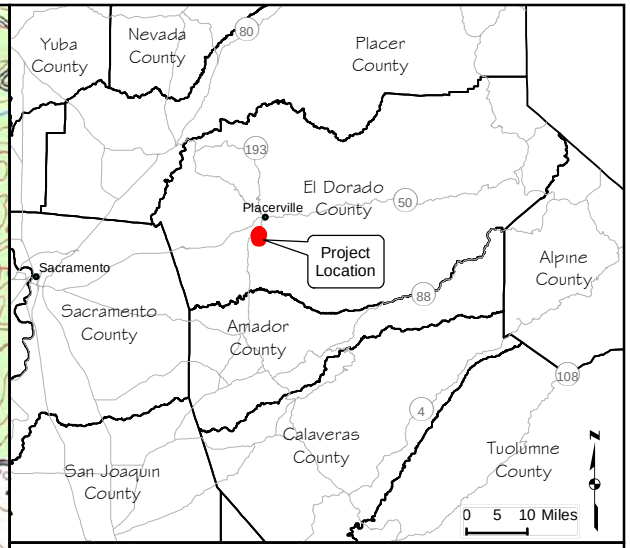
Contact: Mr. Kevin Sweeney
Phone: 530/ 893-1515

D. Project Description

The project intends to design a residential subdivision at the site. Project design has not been finalized, and this report does not quantify impacts or propose mitigation.

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Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 1. Project Location Map

Project Location

2,000 1,000 0 2,000 Feet

N

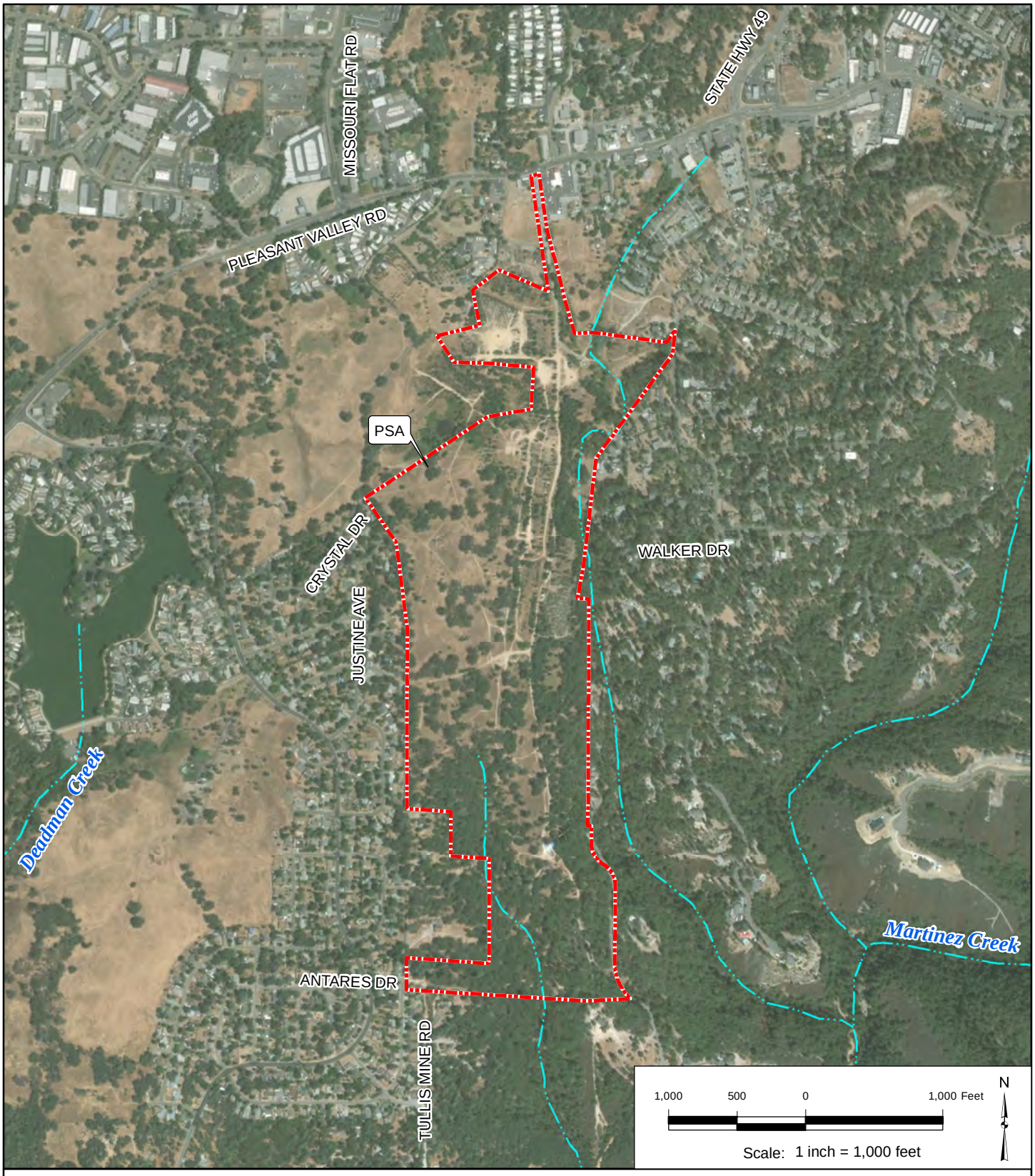
Scale: 1 inch = 2,000 feet

SYCAMORE
Environmental
Consultants, Inc.

Placerville, CA (Revised 1973)
CASIL California USGS Digital Raster Graphics (DRG),
7.5 Minute (C) Series, Albers Nad83 Mosaics (MrSID)
o_nw0101.sid & o_nw0102.sid

17047StonehengeSprings_Fig1LocationMap(8x11).mxd

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Stonehenge Springs
El Dorado County, CA
6 February 2018

Project Study Area (PSA)

NHD Flowlines

SYCAMORE Environmental Consultants, Inc.

Aerial Photograph: 11 July 2016
NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

USGS National Hydrography Dataset (NHD) Flowlines

Figure 2. Aerial Photograph

17047StonehengeSprings_Fig2AerialPhoto(8x11).mxd

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E. Previous Delineation Work

A previous determination was verified for the majority of the BSA in a letter dated 18 August 2008 (Corps File #SPK-200702110). That determination covered all of the northern portion of the current BSA, but some of the southern portion of the current BSA was not included. The 2008 verification determined there were 2.97 acres of waters of the U.S., and 0.19 acre of isolated waters. The 0.19 acre of isolated waters consisted of ten small seasonal wetlands that have formed in the previously graded areas of the site. The 2008 delineation report was conducted in part with datasheets and indicators in use prior to the finalization of the Corps' (2008) Arid West delineation manual. The general location of mapped features, including isolated wetlands, verified in 2008 is similar to the current results.

II. STUDY METHODS

A. Data Sources

Table 1 is a list of data sources compiled for this report.

Table 1. Data Sources

Data Source	Data Location/Results
1. Maps, plans, plots or plat submitted by or on behalf of the applicant	See Figures 1 through 4.
2. Data sheets prepared/submitted by or on behalf of the applicant	See Appendix A.
3. Corps navigable waters study	Corps (September 2017).
4. U.S. Geological Survey Hydrologic Atlas • USGS NHD data • USGS 8- and 12-digit HUC maps	Upper Cosumnes (18040013) Martinez Creek (18400130203)
5. U.S. Geological Survey map(s)	Placerville USGS quad, see Figure 1.
6. USDA Natural Resources Conservation Service Soil Survey	NRCS 1974, USDA-NRCS 2017a, b; see Figure 3.
7. National wetlands inventory map(s)	NWI map for the Placerville quad.
8. State/Local wetland inventory map(s)	None known.
9. FEMA/FIRM maps	See Appendix D.
10. 100-year Floodplain Elevation is: (e.g. National Geodetic Vertical Datum of 1929)	The BSA is determined to be outside the 0.2% annual chance floodplain.
11. Photographs: • Aerial (Name & Date): • Other (Name & Date):	• Figure 2, Aerial Photograph, 11 July 2016 • Appendix B, Photographs, 2017
12. Previous determination(s). File no. and date of response letter	File no. SPK-200702110. Verified 18 August 2008.

B. Survey Dates and Personnel

Fieldwork for the jurisdictional delineation was conducted by Chuck Hughes, M.S., and Nicole Desideri, B.S., on 27 June 2017. Chuck Hughes conducted fieldwork on 8 August, 7 September, and 13 September 2017. Nicole Desideri conducted additional fieldwork on 15 September 2017.

C. Survey Methods

This report has been prepared in accordance with the Sacramento District minimum standards (Corps January 2016), U.S. Army Corps of Engineers Wetland Delineation Manual (Corps 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0; Corps 2008), and the guide to OHWM for the western mountains, valleys, and coast (August 2014). The western mountains OHWM guide was used because the regional streams around the BSA are more accurately represented by that guide. The Arid West supplement for wetlands is intended to bring the Corps Manual (Corps 1987) up to date with current knowledge and practice in the region. Use of the Corps Manual in combination with the supplement is intended to improve the accuracy and efficiency of wetland delineation procedures in the Arid West regions. The Arid West Regional Supplement is applicable because the BSA experiences hot, dry summers typical of a Mediterranean climate, and the surrounding landscape is dominated by oak woodland and annual grassland (Corps 2008).

All areas possessing an ordinary high water mark or meeting the three criteria for wetlands were identified and mapped. Hydrophytic classifications of plants were determined from the national list of plant species that occur in wetlands (Lichvar et al. 2016).

D. Jurisdictional Data

The jurisdictional delineation was conducted using the Routine On-Site Determination Method (Corps 1987). Jurisdictional data were recorded using the Wetland Determination Data Form for the Arid West Region (Corps 2008). Soil, vegetation, and hydrology data were recorded at the data points. Data sheets are in Appendix A. Photographs are in Appendix B. Appendix C is a list of plant species recorded at the data points.

E. Mapping of Data and Calculation of Acreages

Waters and wetland boundaries were mapped with a sub-meter accurate global positioning system (GPS). The GPS data were exported to a geographic information system (GIS) shapefile mapping format and overlaid onto a topographic contour map to create Figure 4. Field notes, contours, and aerial photography supplemented GPS data wherever a signal could not be received or terrain prevented access. Acreages were calculated using ESRI® ArcMap™ mapping functions.

F. Definitions

The Corps and EPA regulate the discharge of dredge and fill material into "waters of the United States" under Section 404 of the Clean Water Act (CWA; 33 U.S.C. 1344). The lateral limits of jurisdiction in waters of the U.S. may be divided into three categories. The categories are the territorial seas, tidal waters, and non-tidal waters [see 33 CFR 328.4 (a), (b), and (c), respectively]. The current regulations defining waters of the U.S. [33 CFR 328.3(a)] and defining features that are excluded [33 CFR 328.3(b)], became effective on 28 August 2015 (80 FR 37054), but has since been stayed by the U.S Sixth Circuit Court of Appeals on 9 October 2015. The definition of waters of the U.S. below, from prior to 28 August 2015, is the definition currently implemented by the Corps while the stay from the Circuit Court is in effect.

Wetlands, where jurisdictional under the CWA, are a subset of waters of the U.S. Wetlands, as defined by the Corps for regulatory purposes, are identified using a three-parameter test that considers whether hydrophytic vegetation, hydric soils, and wetland hydrology are present (Corps 1987, 2008).

The term "waters of the U.S." is defined at 33 CFR 328.3(a) as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

The term "adjacent" is defined at 33 CFR 328.3(c):

> The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."

The limits of jurisdiction are identified in 33 CFR 328.4 as:

a. Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)
b. Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:
    1. Extends to the high tide line, or
    2. When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.
c. Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:
    1. In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
    2. When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
    3. When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

The term "ordinary high water mark" is defined at 33 CFR 328.3(e):

> The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

An ephemeral tributary has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral tributary beds are located above the water table year-round. Groundwater is not a source of water for the tributary. Runoff from rainfall is the primary source of water for tributary flow. An intermittent tributary has flowing water during certain times of the year, when groundwater provides water for tributary flow. During dry periods, intermittent tributaries may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. A perennial tributary has flowing water year-round during a typical year (66 FR 42099).

III. SETTING

The BSA is on the south side of Highway 49 in the community of Diamond Springs, California. Much of the BSA is characterized by undeveloped oak woodland. A substantial area of the BSA was graded in the past, prior to 1993. There are two intermittent channels and several ephemeral tributaries flowing through the BSA. The area surrounding the BSA consists of both residential and commercial uses.

A. Topography

The elevation ranges from approximately 1,690 to 1,825 feet. The terrain is uneven, with gentle to moderate slopes.

B. Existing Field Conditions

Fieldwork for the jurisdictional delineation was conducted on 27 June – 15 September 2017. Average precipitation through 27 June 2017 at the Placerville National Weather Service (NWS 2017) station is 38.07 inches (rain-year beginning 1 July). As of 27 June 2017, 66.96 inches had been recorded, or 175.9% of normal. The region, including the BSA, had wetter than normal hydrologic conditions during the fieldwork.

C. Vegetation

Vegetation in the overstory of the BSA consists primarily of oak trees. Valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), and black oak (*Quercus kelloggii*) are the dominant overstory components in most of the BSA. Ponderosa pine (*Pinus ponderosa*) and canyon live oak (*Quercus chrysolepis*) are also common. The shrub layer is dominated by manzanita (*Arctostaphylos viscida*), but toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*) and poison oak (*Toxicodendron diversilobum*) are common as well. The understory is primarily composed of annual grasses and forbs. Dominant species include bromes (*Bromus* sp.), rye grass (*Festuca* [=*Lolium*] *perennis*), wild oat (*Avena* sp.), annual hair grass (*Deschampsia danthonoides*), and rose clover (*Trifolium hirtum*). See section IV for further discussion of vegetation in and along waters and in wetlands. Appendix C contains a list of plant species recorded at the data points.

D. Existing Level of Disturbance

Much of the north and central areas of the BSA were previously graded for development prior to 1993. Some of the previously graded areas remain mostly bare, with little vegetation. In some areas, young trees and shrubs, particularly ponderosa pine and manzanita, are recolonizing this area. Several dirt roads occur throughout the BSA. Many areas of the BSA have been used as homeless campsites, as well as dumping grounds for car parts, tires and other trash.

E. Soils

Soil pits were dug to observe the chroma, texture, degree of saturation, and other characteristics. The primary component soils of mapping units in the BSA (Figure 3) are summarized below (NRCS 1974, USDA-NRCS 2017a, b). Reported colors are for moist soil. Placer diggings is identified as hydric across 10 percent of its total acreage in the El Dorado Area by the USDA (2015). None of the other soils are identified as hydric.

<u>Diamond Springs very fine sandy loam, 9 to 15 percent slopes;</u>
<u>Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes:</u>
The Diamond Springs series consists of well-drained soils underlain by fine-grained acidic igneous rocks at a depth of 24 to 50 inches. A typical profile has dark brown (10YR 4/3) very fine sandy loam from 0 to 3 inches, yellowish brown (10YR 5/4) loam from 3 to 9 inches, yellowish brown (10YR 5/4) light clay loam from 9 to 14 inches, light yellowish brown (10YR 6/4) clay loam from 14 to 28 inches, very pale brown (10YR 7/4) clay loam from 28 to 36 inches, and very pale brown (10YR 7/4) coarse sandy clay loam that has

brownish-yellow (10YR 6/6) mineral grains from 36 to 40 inches. In Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes, approximately 5-25 percent of the surface is rock outcrops. Surface runoff is medium to rapid, and the erosion hazard is slight to high. The soil profile has medium to very strong acidity.

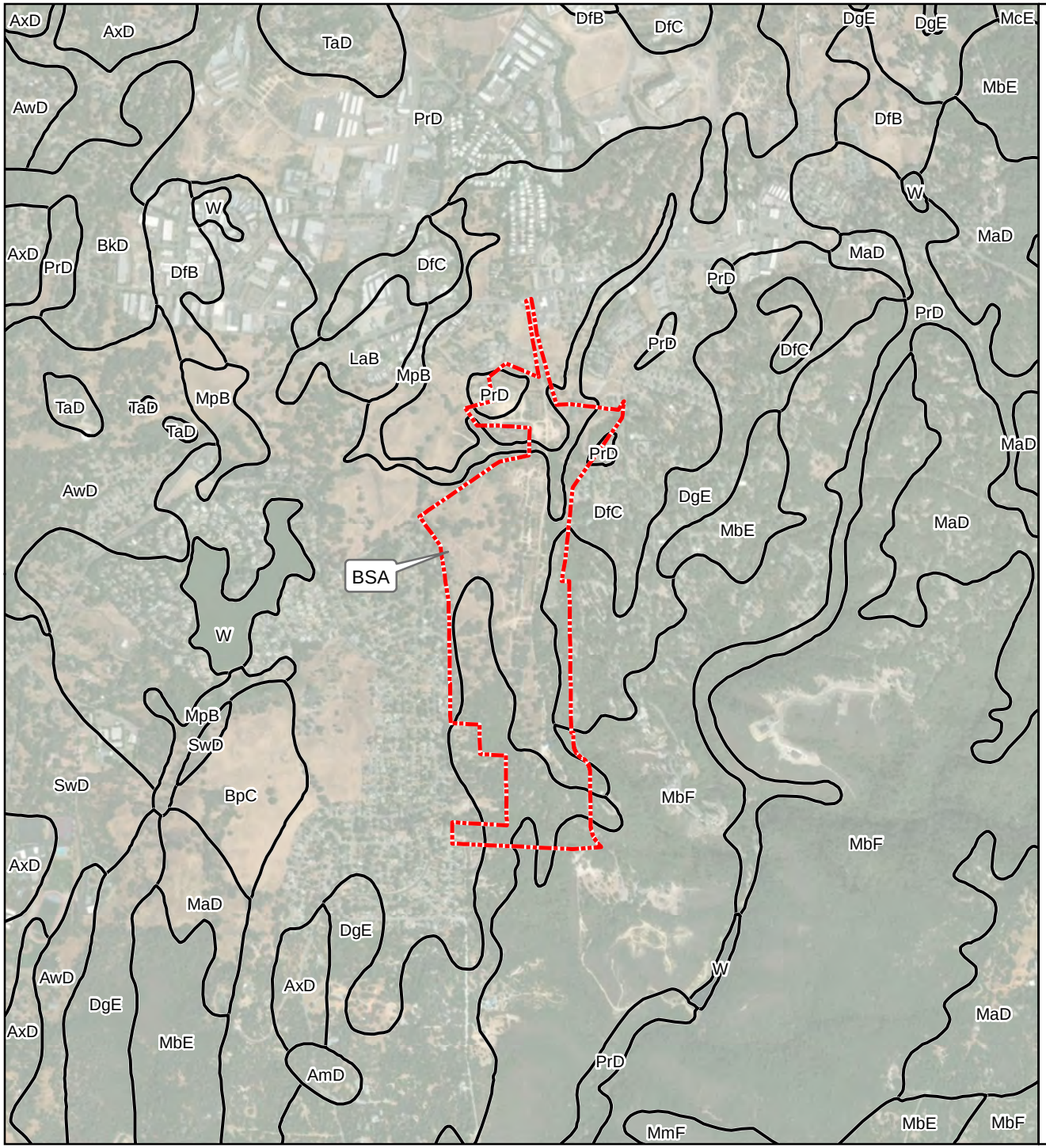
Mariposa very rocky silt loam, 50 to 70 percent slopes:
The Mariposa series consists of well-drained soils that are underlain by vertically tilted schists and slate and contact metamorphic rock. A typical profile has reddish brown (5YR 4/4) gravelly silt loam from 0 to 8 inches, yellowish red (5YR 4/6) gravelly silt loam from 8 to 15 inches, yellowish red (5YR 4/6) gravelly heavy silt loam from 15 to 26 inches, and yellowish brown weathered slate or schist below 26 inches. Surface runoff is rapid and erosion hazard is high.

Mixed alluvial land:
Mixed Alluvial Land consists of small areas of recent mixed alluvium adjacent to stream channels. It is derived from volcanic and sedimentary rock. The color of this soil is variable. Mixed Alluvial Land is stratified gravelly sandy loam, gravelly loam, and gravelly clay loam that grades into sand and gravel as depth increases. Underlying bedrock is found 36 to 40 inches deep. This land type is poorly to moderately well drained, and permeability is moderately rapid to slow. Surface runoff is slow to medium, and the erosion hazard is moderate. This land is subject to frequent flooding in the winter (NRCS 1974; USDA-NRCS 2017).

Placer diggings:
The Placer Diggings soil consists of areas of stony, cobbly and gravelly material. It is commonly found in beds of creeks and other streams on 2 to 15 percent slopes, or of areas that have been placer mined and contain enough fine sand or silt to support some grass for grazing. This material is derived from a mixture of rocks and commonly is stratified or poorly sorted. The depth of the soil is variable, from 6 inches to more than 5 feet deep. Areas in streambeds occasionally are flooded during the rainy season. Surface runoff is low and available water storage is very low (NRCS 1974; 2016b). Placer Diggings may meet hydric soil criteria when it occurs in channels (NRCS 2015).

F. National Wetlands Inventory Map

Channel 1 and Channel 2, two unnamed tributaries to Martinez Creek that occur in the northeast and south of the BSA, are identified as riverine, intermittent, seasonally flooded streambeds (R4SBC) on the NWI map. The pond that occurs along the western edge of the BSA is identified as palustrine, emergent, persistent, and seasonally flooded (PEM1C). There are no other features in the BSA on the NWI map.



Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 3. Soils Map

Project Study Area (PSA)

Soil Boundary

Soil Mapping Unit

Symbol	Name
DfC	Diamond Springs very fine sandy loam, 9 to 15 percent slopes
DgE:	Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes
MbF	Mariposa very rocky silt loam, 50 to 70 percent slopes
MpB	Mixed alluvial land
PrD	Placer diggings

1,667 0 1,667 Feet

N

Scale: 1 inch = 1,667 feet

SYCAMORE Environmental Consultants, Inc.

Soil Survey Geographic (SSURGO) database for El Dorado Area, California, USDA, NRCS
URL:http://SoilDataMart.nrcs.usda.gov/

Aerial Photo: 13 July 2014
NAIP2014 USDA FSA Imagery
ArcGIS Imagery Basemap layer

17047StonehengeSprings_Fig3SoilsMap(8x11).mxd

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IV. WATERS AND WETLANDS

Waters and wetlands are shown on the jurisdictional delineation map in Figure 4. A summary of acreages by feature is in Table 2 below. On 28 August 2015 a new regulation defining what features are and are not waters of the U.S. became effective (32 CFR 328.3), but was stayed by the U.S Sixth Circuit Court of Appeals on 9 October 2015. An evaluation of waters and wetlands pursuant to the definition of waters of the U.S. and their potential jurisdiction under Section 404 of the Clean Water Act (33 U.S.C. 1344) is in Section V. Section V uses the Waters of the U.S. rule in effect prior to 28 August 2015.

Table 2. Summary of Waters and Wetlands

Feature	Hydrology/ Cowardin Classification	Length (ft)	Avg. Width (ft)	Area (ac)
Channel 1 (Eph.)	Ephemeral/ R4SB3A	118	4.0	0.011
Channel 1 (Int.)	Intermittent/ R4SB3C	1,500	15.8	0.545
Channel 1a	Ephemeral/ R4SB3A	130	3.0	0.009
Channel 1b	Ephemeral/ R4SB3A	171	2.0	0.008
Channel 1c	Ephemeral/ R4SB3A	290	3.0	0.020
Channel 1d	Ephemeral/ R4SB3A	665	2.8	0.043
Channel 1e	Ephemeral/ R4SB3A	20	1.7	0.001
Channel 1f	Ephemeral/ R4SB3A	35	1.5	0.001
Channel 2 (Eph.)	Ephemeral/ R4SB3A	2,130	3.5	0.170
Channel 2 (Int.)	Intermittent/ R4SB3C	520	6.9	0.083
Channel 2a	Ephemeral/ R4SB3A	86	3.0	0.006
Channel 2b	Ephemeral/ R4SB3A	380	2.6	0.023
Channel 2c	Ephemeral/ R4SB3A	300	2.0	0.014
Channel 2d	Ephemeral/ R4SB3A	138	2.9	0.009
Channel 2e	Ephemeral/ R4SB3A	350	1.0	0.008
Channel 2f	Ephemeral/ R4SB3A	325	1.0	0.007
Channel 2g	Ephemeral/ R4SB3A	200	1.0	0.005
Channel 2h	Ephemeral/ R4SB3A	340	1.0	0.008
Channel 2i	Ephemeral/ R4SB3A	220	1.0	0.005
Channel 3	Ephemeral/ R4SB3A	172	1.0	0.004
Seasonal Pond	PUBF	--	--	0.384
	Subtotal Waters:	**8,090**	**--**	**1.364**
Wetland 1	PEM1A	--	--	0.070
Wetland 2	PEM1A	--	--	0.079
Wetland 3	PEM1A	--	--	0.073
Wetland 4	PEM1A	--	--	0.070
Wetland 5	PEM1A	--	--	0.009
Wetland 6	PEM1A	--	--	0.007
Wetland 7	PEM1A	--	--	0.042
Wetland 8	PEM1A	--	--	0.005
Wetland 9	PEM1A	--	--	0.005
Wetland 10	PEM1A	--	--	0.023

Table 2. (Continued)

Feature	Hydrology/ Cowardin Classification	Length (ft)	Avg. Width (ft)	Area (ac)
Wetland 11	PEM1A	--	--	0.041
Wetland 12	PEM1A	--	--	0.009
Wetland 13	PEM1A	--	--	0.009
Wetland 14	PEM1A	--	--	0.012
Wetland 15	PEM1A	--	--	0.013
Wetland 16	PEM1A	--	--	0.018
Wetland 17	PEM1A	--	--	0.018
Wetland 18	PEM1A	--	--	0.006
Wetland 19	PEM1A	--	--	0.111
Wetland 20	PEM1A	--	--	0.004
Wetland 21	PEM1A	--	--	0.242
Wetland 22	PEM1A	--	--	0.065
Wetland 23	PEM1A	--	--	0.093
Wetland 24	PEM1A	--	--	0.051
Wetland 25	PEM1A	--	--	0.011
Wetland 26	PEM1A	--	--	0.034
Subtotal Wetlands:		**--**	**--**	**1.120**
Grand Total Wetlands and Waters:		**8,090**	**--**	**2.484**

A. Waters

Channels 1 and 1a–f: Channel 1 is an intermittent channel south of Wetland 3, and an ephemeral channel north of Wetland 3. Some of the intermittent reaches of Channel 1 had standing water, or a small amount of surface flow, in September 2017 (see Photo 7, Appendix B). No nearby sources of urban irrigation runoff were identified. The reach of Channel 1 above Wetland 3 was dry. The OHWM was identified based on scoured rock and soil. The substrate is mostly cobble, with some areas of soil or recent fine sediment. There is patchy riparian vegetation along some of Channel 1, consisting mostly of willows (*Salix* sp.) and nonnative invasive Himalayan blackberry (*Rubus armeniacus*). Channel 1 is a tributary to Martinez Creek, 0.3 mile southeast of the BSA.

Channels 1a–f are all ephemeral tributaries to Channel 1. Channel 1d is the largest and enters the BSA from the east through a culvert under Fowler Road. All of these ephemeral tributaries to Channel 1 were dry during delineation fieldwork, as well as dry during separate botanical fieldwork conducted in June 2017. The OHWM for Channels 1a–f was identified based on scoured soil.

Channels 2 and 2a–i: Channel 2 flows south through the southern half of the BSA, and is a tributary to Martinez Creek, 0.3 mile southeast of the BSA. Channel 2 is ephemeral above the tributary Channel 2e. Standing water seeping out from among some small bedrock outcrops was still present near the Channel 2e confluence in late June 2017 (see Photo 4,

Appendix B). By early August 2017, all of Channel 2 was dry. The OHWM was identified based on scoured rock and cobble for the intermittent reach of Channel 2, and on scoured soil and cobble for the ephemeral reach of Channel 2. There is no developed riparian community along Channel 2, although there are a few patches of obligate herbaceous vegetation within the intermittent reach.

Channels 2a–i are all ephemeral tributaries to Channel 2. The OHWM of these channels was identified based on scoured soil. All of these tributaries were dry at the time of August and September delineation fieldwork, as well as dry during separate botanical fieldwork conducted in June 2017.

Channel 3: Channel 3 is an ephemeral channel. The OHWM was identified based mostly on scoured soil. There is no riparian community along Channel 3. Channel 3 was dry during August 2017 delineation fieldwork, as well as dry during separate botanical fieldwork conducted in June 2017. Channel 3 is culverted under Fowler Lane on the east side of the BSA. Farther east and outside of the BSA, Channel 3 is tributary to Channel 1.

Pond: The pond occurs along the western edge of the BSA and is mostly outside the BSA. Two portions of the pond are in the BSA, but are part of the same pond that is connected outside the BSA. A total of 0.384 acre of the pond is within the BSA. Surface water accumulates in the pond up to a depth of several feet. On 13 September 2017, part of the pond off-site still had approximately 1 foot of water. Sycamore Environmental also observed remaining water in the deepest off-site parts of the pond on 12 September and 10 December 2006 for an adjacent project. Based on review of aerial photographs the pond may completely dry out in dry years, but retain some standing water in the deepest parts in wet years (Google, Inc. 2017). The OHWM was identified based on the destruction of terrestrial vegetation and wracking. The pond is the result of an off-site impoundment of a wetland swale.

B. Wetlands

Wetlands 1, 3, and 4: These three wetlands are near the upper reaches of the Channel 1 complex, and they all drain into Channel 1. Wetland 1 is dominated by Baltic rush (*Juncus balticus*, FACW), met the depleted matrix soil indicator, and met the drainage patterns and FAC-neutral test secondary hydrology indicators. Wetlands 3 and 4 are both dominated by whiteroot sedge (*Carex barbarae*, FAC). Wetland 3 met the depleted matrix soil indicator, and both wetlands had sediment deposits. The soil in wetland 4 was problematic because there was deep, recently deposited sand. Hydric soil was assumed in wetland 4 based on vegetation and hydrology indicators.

Wetlands 2, 5–22, and 25: All of these wetlands occur in areas of the BSA that were previously graded for development, or on adjacent dirt roads. The wetlands have since developed in low spots that either do not drain well or do not drain at all. They have substantial bare soil as a result of ongoing vehicle disturbance. Vegetation, where present, is dominated by herbaceous species including spikerush (*Eleocharis macrostachya*, OBL), annual hair grass (*Deschampsia danthonoides*, FACW), loosestrife (*Lythrum portula*, OBL; *L. hyssopifolia*, OBL), and rye grass (*Festuca perennis*; FAC). Soils were generally thin over rock or compacted layers as a result of the past grading. Soil profiles that were present met the redox depressions indicator. The hydrology indicators were biotic crust and FAC-neutral test.

Wetlands 7 and 19 are low spots in dirt roads in previously graded areas. When full, these features would drain into Channels 1c and 1a, respectively.

Wetlands 2, 5, 6, 8–18, 20–22, and 25 are low spots in previously graded areas or dirt roads that do not appear to ever inundate enough to drain to other areas or features in the BSA.

Wetlands 23 and 24: These two wetlands are impoundments along the upper reach of Channel 2. Wetland 23 is a stock pond impounded by an earthen berm across the drainage of Channel 2. No spillway around the berm or culvert through the berm was found. Vegetation was dominated by loosestrife and annual beard grass (*Polypogon monspeliensis*, FACW). Soil met the redox depressions indicator. The hydrology indicators were biotic crust and FAC-neutral test. Wetland 23 may contain up to about 2 feet of inundation when full.

Wetland 24 is below the earthen berm that impounds Wetland 23. Wetland 24 is impounded by a culvert under a dirt road that does not drain well. Vegetation is dominated by rye grass. Soil met the redox depressions indicator. The hydrology indicator was biotic crust. Wetland 23 may inundate up to a few inches in depth due to the poor drainage of the adjacent culvert.

Wetland 26: This wetland is in a natural swale, and when full, drains via sheet flow into Channel 2g. Vegetation is dominated by loosestrife. Soil met the depleted matrix and redox depressions indicators. The hydrology indicators were biotic crust and FAC-neutral test.

Lat: 38°41'39.78"N
Long: 120°48'36.80"W

COMMERCE WAY
PLEASANT VALLEY RD
MISSOURI FLAT RD
WRANGLER RD
SILVER DR
HOWARD CIR
TOYAN DR
SUNRISE DR
SHORT RD
CRESTVIEW DR
NORTH CIRCLE DR
WALKER DR
PATTERSON DR
CRYSTAL DR
JUSTINE AVE
CRUSADER RD
CROWN POINT DR
SOUTH POINT RD
GRIFFITH DR
VOLO MINE DR
ANTARES DR
TULLIS MINE RD

Sheet 2 of 6
Sheet 3 of 6
Sheet 4 of 6
Sheet 5 of 6
Sheet 6 of 6

DP1, DP2, DP3, DP4, DP17, DP18, DP19, DP20, DP21, DP22, DP24, DP25, DP26, DP27, DP28, DP29, DP30, DP31, DP32, DP35, DP36, DP37, DP38, DP33, DP34, DP16, DP13, DP15, DP14, DP 5, DP42, DP6, DP12, DP11, DP41, DP7, DP40, DP10, DP8, DP39, DP9

W1, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, W22, W23, W24, W25, W26

CH1
CH2
Seasonal Pond

Lat: 38°40'31.23"N
Long: 120°49'41.01"W

500 250 0 500 Feet
Scale: 1 inch = 500 feet
N

Stonehenge Springs
El Dorado County, CA
6 February 2018

Project Study Area (PSA)
Data Point Location and Number
Culvert
Wetland (W)
Channel (CH)
Seasonal Pond

SYCAMORE Environmental Consultants, Inc.

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

Figure 4.
Jurisdictional Delineation Map
Sheet 1 of 6, Key to Sheets

Topographic Basemap: Stonehenge Springs Lotting Exhibit (26 June 2017)
CAD file: 05-097-001 CLUSTER- LOT EXHIBIT-V11 06-26-17.dwg
by CTA Engineering and Surveying
Aerial Photograph: 11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSprings_Fig4DelinMap(11x17)Sht1of6Key_v2.mxd

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Lat: 38°41'37.75"N
Long: 120°48'52.45"W

PLEASANT VALLEY RD
TULLIS MINE RD
SILVER DR
HOWARD CIR
SUNRISE DR

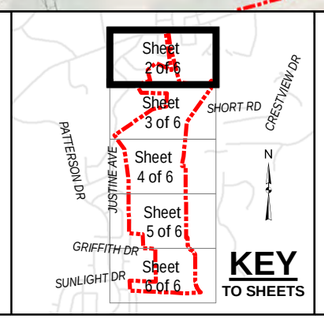
DP1
W1
(A = 0.07 ac)
DP4
DP2
DP3
DP28
DP27
CH1
(L = 118 ft; Avg.Width = 4.0 ft
A = 0.011 ac; Ephemeral)
W2
(A = 0.079 ac)
DP30
DP29
DP26
DP18
CH1d
(L = 665 ft; Avg.Width = 2.8 ft
A = 0.043 ac; Ephemeral)

Lat: 38°41'25.61"N
Long: 120°49'23.68"W

Feature	Flow	Length (ft)	Average Width (ft)	Area (ac)
Wetland (W)				
W1	--	--	--	0.070
W2	--	--	--	0.079
W3	--	--	--	0.073
W4	--	--	--	0.070
W5	--	--	--	0.009
W6	--	--	--	0.007
W7	--	--	--	0.042
W8	--	--	--	0.005
W9	--	--	--	0.005
W10	--	--	--	0.023
W11	--	--	--	0.041
W12	--	--	--	0.009
W13	--	--	--	0.009
W14	--	--	--	0.012
W15	--	--	--	0.013
W16	--	--	--	0.018
W17	--	--	--	0.018
W18	--	--	--	0.006
W19	--	--	--	0.111
W20	--	--	--	0.004
W21	--	--	--	0.242
W22	--	--	--	0.065
W23	--	--	--	0.093
W24	--	--	--	0.051
W25	--	--	--	0.011
W26	--	--	--	0.034
	Total Wetlands	--	--	*1.120*
Channel (CH)				
CH1	Ephemeral	118	4.0	0.011
CH1	Intermittent	1,500	15.8	0.545
CH1a	Ephemeral	130	3.0	0.009
CH1b	Ephemeral	171	2.0	0.008
CH1c	Ephemeral	290	3.0	0.020
CH1d	Ephemeral	665	2.8	0.043
CH1e	Ephemeral	20	1.7	0.001
CH1f	Ephemeral	35	1.5	0.001
CH2	Ephemeral	2,130	3.5	0.170
CH2	Intermittent	520	6.9	0.083
CH2a	Ephemeral	86	3.0	0.006
CH2b	Ephemeral	380	2.6	0.023
CH2c	Ephemeral	300	2.0	0.014
CH2d	Ephemeral	138	2.9	0.009
CH2e	Ephemeral	350	1.0	0.008
CH2f	Ephemeral	325	1.0	0.007
CH2g	Ephemeral	200	1.0	0.005
CH2h	Ephemeral	340	1.0	0.008
CH2i	Ephemeral	220	1.0	0.005
CH3	Ephemeral	172	1.0	0.004
	Total Channels	*8,090*	--	*0.980*
Seasonal Pond		0	0.0	0.384
	Total Wetlands and Waters	**8,090**	--	**2.484**

Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 4.
Jurisdictional Delineation Map
Sheet 2 of 6



Matchline - See Sheet 2 of 5

Project Study Area (PSA)
Wetland (W)
Channel (CH)
Data Point Location and Number
===== Culvert
P1 Photopoint Location and Direction

150 75 0 150 Feet N

Scale: 1 inch = 150 feet

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

SYCAMORE Environmental Consultants, Inc.

Topographic Basemap:
Stonehenge Springs Lotting Exhibit (26 June 2017)
CAD file: 05-097-001 CLUSTER- LOT EXHIBIT-V11 06-26-17.dwg
by CTA Engineering and Surveying
Aerial Photograph:
11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

170475tonehengeSprings_Fig4DelinMap(11x17)Shts2-6_v2.mxd

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Matchline - See Sheet 1 of 5

DP17

CH1
(L = 118 ft; Avg.Width = 4.0 ft
A = 0.011 ac; Ephemeral)

DP19

W3
(A = 0.073 ac)

DP20

W4
(A = 0.07 ac)

DP22

Lat: 38° 41'25.30"N
Long: 120°48'52.66"W

DP21

W5
(A = 0.009 ac)

DP23

DP24

DP25

CH1d
(L = 665 ft; Avg.Width = 2.8 ft
A = 0.043 ac; Ephemeral)

CH1c
(L = 290 ft; Avg.Width = 3.0 ft
A = 0.02 ac; Ephemeral)

DP31

W6
(A = 0.007 ac)

DP32

CH1f
(L = 35 ft; Avg.Width = 1.5 ft
A = 0.001 ac; Ephemeral)

W7
(A = 0.042 ac)

Culvert

CH1e
(L = 20 ft; Avg.Width = 1.7 ft
A = 0.001 ac; Ephemeral)

W8
(A = 0.005 ac)

W12
(A = 0.009 ac)

DP36

W9
(A = 0.005 ac)

Seasonal Pond
(A = 0.384 ac)

DP35

W10
(A = 0.023 ac)

W13
(A = 0.009 ac)

W11
(A = 0.041 ac)

W14
(A = 0.012 ac)

CH1
(L = 1,500 ft; Avg.Width = 15.8 ft
A = 0.545 ac; Intermittent)

TULLIS MINE RD

W15
(A = 0.013 ac)

DP37

W16
(A = 0.018 ac)

W17
(A = 0.018 ac)

CH1b
(L = 171 ft; Avg.Width = 2.0 ft
A = 0.008 ac; Ephemeral)

W18
(A = 0.006 ac)

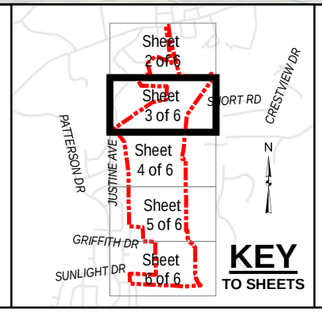
W19
(A = 0.111 ac)

Lat: 38°41'13.16"N
Long: 120°49'23.89"W

Matchline - See Sheet 3 of 5

Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 4.
Jurisdictional Delineation Map
Sheet 3 of 6



Project Study Area (PSA)

Wetland (W)

Channel (CH)

Data Point Location and Number

===== Culvert

P1 Photopoint Location and Direction

150 75 0 150 Feet N

Scale: 1 inch = 150 feet

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

SYCAMORE
Environmental
Consultants, Inc.

Topographic Basemap:
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Aerial Photograph:
11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSprings_Fig4DelinMap(11x17)Shts2-6_v2.mxd

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Matchline - See Sheet 2 of 5

Lat: 38°41'12.85"N
Long: 120°48'52.86"W

CRYSTAL DR

WALKER DR

JUSTINE AVE

ARGONAUT DR
Lat: 38°41'0.71"N
Long: 120°49'24.09"W

W19
(A = 0.111 ac)

CH1a
(L = 130 ft; Avg.Width = 3.0 ft
A = 0.009 ac; Ephemeral)

CH1b
(L = 171 ft; Avg.Width = 2.0 ft
A = 0.008 ac; Ephemeral)

CH1
(L = 1,500 ft; Avg.Width = 15.8 ft
A = 0.545 ac; Intermittent)

DP38

W20
(A = 0.004 ac)

W21
(A = 0.242 ac)

DP34

W22
(A = 0.065 ac)

DP33

DP16

CH2
(L = 2,130 ft; Avg.Width = 3.5 ft
A = 0.17 ac; Ephemeral)

DP13

W23
(A = 0.093 ac)

DP15

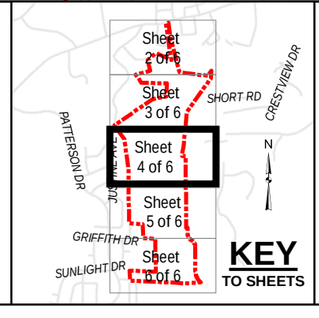
W24
(A = 0.051 ac)

DP14

W25
(A = 0.011 ac)

Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 4.
Jurisdictional Delineation Map
Sheet 4 of 6



Matchline - See Sheet 4 of 5

Project Study Area (PSA)
Wetland (W)
Channel (CH)
Data Point Location and Number
===== Culvert
P1 Photopoint Location and Direction

150 75 0 150 Feet N

Scale: 1 inch = 150 feet

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

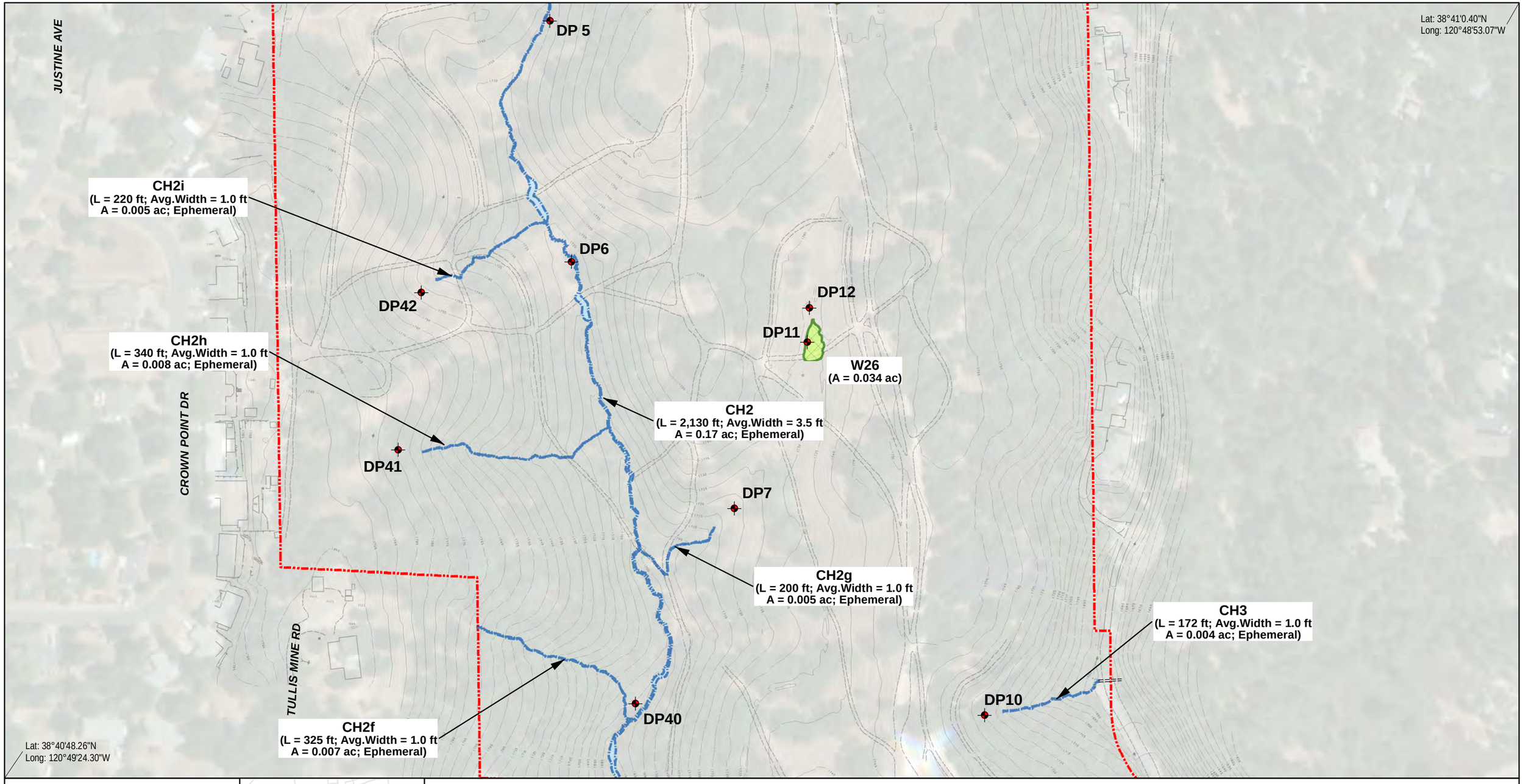
SYCAMORE
Environmental
Consultants, Inc.

Topographic Basemap:
Stonehenge Springs Lotting Exhibit (26 June 2017)
CAD file: 05-097-001 CLUSTER- LOT EXHIBIT-V11 06-26-17.dwg
by CTA Engineering and Surveying
Aerial Photograph:
11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSprings_Fig4DelinMap(11x17)Shts2-6_v2.mxd

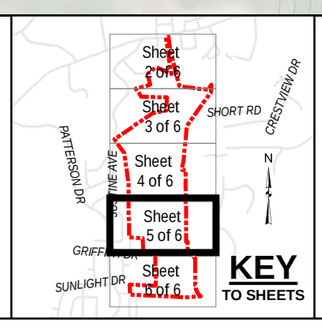
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Matchline - See Sheet 3 of 5



Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 4.
Jurisdictional Delineation Map
Sheet 5 of 6



Matchline - See Sheet 5 of 5

Project Study Area (PSA)
Wetland (W)
Channel (CH)
Data Point Location and Number
===== Culvert
P1 Photopoint Location and Direction

150 75 0 150 Feet N
Scale: 1 inch = 150 feet

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

SYCAMORE
Environmental
Consultants, Inc.

Topographic Basemap:
Stonehenge Springs Lotting Exhibit (26 June 2017)
CAD file: 05-097-001 CLUSTER- LOT EXHIBIT-V11 06-26-17.dwg
by CTA Engineenng and Surveying
Aerial Photograph:
11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSpnngs_Fig4DelinMap(11x17)Shts2-6_v2.mxd

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Matchline - See Sheet 4 of 5

GRIFFITH DR

ALTA RD

PATTERSON DR

ANTARES DR

CAPPELLA DR

TULLIS MINE RD

Lat: 38°40'47.95"N
Long: 120°48'53.28"W

DP8

CH2e
(L = 350 ft; Avg.Width = 1.0 ft
A = 0.008 ac; Ephemeral)

CH2
(L = 2,130 ft; Avg.Width = 3.5 ft
A = 0.17 ac; Ephemeral)

CH2b
(L = 380 ft; Avg.Width = 2.6 ft
A = 0.023 ac; Ephemeral)

CH2
(L = 520 ft; Avg.Width = 6.9 ft
A = 0.083 ac; Intermittent)

DP39

DP9

CH2a
(L = 86 ft; Avg.Width = 3.0 ft
A = 0.006 ac; Ephemeral)

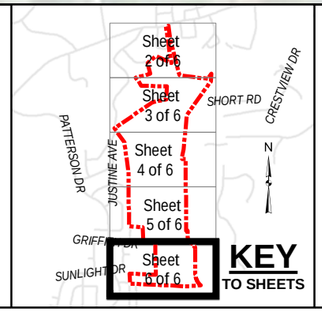
CH2d
(L = 138 ft; Avg.Width = 2.9 ft
A = 0.009 ac; Ephemeral)

CH2c
(L = 300 ft; Avg.Width = 2.0 ft
A = 0.014 ac; Ephemeral)

Lat: 38°40'35.81"N
Long: 120°49'24.50"W

Stonehenge Springs
El Dorado County, CA
6 February 2018

Figure 4.
Jurisdictional Delineation Map
Sheet 6 of 6



Project Study Area (PSA)
Wetland (W)
Channel (CH)
Data Point Location and Number
Culvert
Photopoint Location and Direction

150 75 0 150 Feet N

Scale: 1 inch = 150 feet

Date	Submittal	Delineator(s)	Agency/Company
6 Feb 18	Original	C. Hughes N. Desideri	Sycamore Environmental

SYCAMORE
Environmental
Consultants, Inc.

Topographic Basemap:
Stonehenge Springs Lotting Exhibit (26 June 2017)
CAD file: 05-097-001 CLUSTER- LOT EXHIBIT-V11 06-26-17.dwg
by CTA Engineering and Surveying
Aerial Photograph:
11 July 2016,NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSprings_Fig4DelinMap(11x17)Shts2-6_v2.mxd

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V. REGULATORY ANALYSIS AND DISCUSSION

On 5 June 2007, the Corps issued a memorandum providing guidance on implementation of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Corps and EPA 2008). The guidance distinguishes among traditional navigable waters (TNW), relatively permanent waters (RPW), and non-relatively permanent waters (non-RPW). The Corps will routinely exercise jurisdiction over traditional navigable waters, relatively permanent waters, and wetlands adjacent to those waters. The jurisdictional determination for non-relatively permanent waters and their adjacent wetlands (if any) will be based on whether there exists a significant nexus with a traditional navigable water. Factors evaluated by the Corps during the significant nexus evaluation will include ecology, hydrology, and the influence of the water on the "chemical, physical, and biological integrity of downstream traditional navigable waters" (Corps and EPA 2008). The Corps may exert jurisdiction if the findings of the significant nexus evaluation indicate that "the tributary and its adjacent wetlands are likely to have an effect [on downstream traditional navigable waters] that is more than speculative or insubstantial" (Corps and EPA 2008).

The Rapanos memorandum (Corps and EPA 2008) does not affect the Court's decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, No. 99-1178 (January 2001; "SWANCC"), which involved statutory and constitutional challenges to the assertion of CWA jurisdiction over isolated, non-navigable, intrastate waters used as habitat by migratory birds. Isolated wetlands and waters are not subject to Clean Water Act jurisdiction. Table 3 applies the "significant nexus" status of waters in the BSA.

Wetlands and waters not subject to the Corps' jurisdiction may come under the jurisdiction of CDFW and/or the RWQCB. For example, "isolated" wetlands not subject to Section 404 in accordance with the SWANCC decision are subject to regulation by the RWQCB.

A. TNWs and Adjacent Wetlands

No TNWs or wetlands adjacent to TNWs occur in the BSA.

B. RPWs that flow directly or indirectly into TNWs

Channel 1, Channel 2, and the pond are RPWs that flow indirectly into TNWs.
The intermittent segments of Channel 1 and Channel 2 are identified as seasonally flooded on the NWI map and are considered relatively permanent waters by the Corps. Channel 1 and 2 are tributaries to Martinez Creek south of the BSA. Martinez Creek is a tributary to Deadman Creek, which is a tributary to the Cosumnes River, which is a tributary to the Mokelumne River, which is a TNW.

The pond is identified as permanently flooded on the NWI map. Field observations and review of aerials suggest that it holds water for most of the year, and is dry for a short period, at least in some years. The pond drains through an off-site wetland swale to the

west into Patterson Lake. Patterson Lake drains to Deadman Creek, which is a tributary to the Cosumnes River, which is a tributary to the Mokelumne River, which is a TNW.

C. Non-RPWs that flow directly or indirectly into TNWs

The ephemeral channels (segments of CH 1 and CH 2, CH 1a-f, CH 2a-i, CH 3) are non-RPWs that flow indirectly into TNWs. All of these channels are ephemeral, and typically only flow in response to precipitation events. Channels 1a-f, the ephemeral segment of Channel 1, and Channel 3 all flow into Channel 1, which indirectly flows into the Mokelumne River, which is a TNW. Channels 2a-i all flow into Channel 2, which indirectly flows into the Mokelumne River, a TNW.

The ephemeral channels do not have "continuous flow at least seasonally (e.g., typically three months)" (Corps December 2008). The jurisdictional determination for non-RPWs is based on whether there exists a significant nexus with a TNW (Corps December 2008). The watershed of the Mokelumne River encompasses approximately 1,397,203 acres. The watershed of the largest ephemeral channel in the BSA (the ephemeral reach of CH 1) encompasses approximately 30 acres. This acreage represents about 2 one-hundred thousandths (0.00002) of the watershed of the Mokelumne River.

The capacity of ephemeral channels in the BSA to carry or reduce pollutants, flood waters, nutrients, or organic carbon is insubstantial relative to the Mokelumne River watershed. The ephemeral channels do not provide habitat for fish or other aquatic species present in the Mokelumne River. The ephemeral channels in the BSA may not have sufficient volume, duration, or frequency of flow to have a significant nexus with the chemical, physical, or biological integrity of the Mokelumne River based on the negligible contributions of the watersheds, and the lack of a relatively permanent hydrologic connection.

D. Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

There are no wetlands directly abutting an RPW that flows directly or indirectly into a TNW in the BSA.

E. Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands 1 and 3 are adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs. These wetlands drain into Channel 1 via sheet flow or a culvert when full. Wetland 3 drains into the intermittent reach of Channel 1 via a culvert.

These small wetlands are over 61 river miles distant from the Mokelumne River, the nearest downstream TNW. They do not support the aquatic habitats or species that occur in the nearest downstream TNW.

Wetland 1 is separated by several hundred feet of uplands from the nearest RPW. Wetland 1 has no more than a speculative or insubstantial effect on the chemical, physical, and biological integrity of the nearest downstream TNW.

Wetland 3 is at the head of the intermittent reach of Channel 1, and the watershed above that point drains through Wetland 3. Much of the watershed above is developed to urban use. Wetland 3 may trap or filter pollutants prior to draining into the intermittent reach of Channel 1.

F. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Wetlands 4, 7, 19, 23, 24, and 26 are adjacent to ephemeral non-RPWs in the BSA. These small wetlands are over 61 river miles distant from the Mokelumne River, the nearest downstream TNW. They do not support the aquatic habitats or species that occur in the nearest downstream TNW. They have no more than a speculative or insubstantial effect on the chemical, physical, and biological integrity of the nearest downstream TNW.

G. Impoundments of waters

The pond is the result of an off-site impoundment of a wetland swale. The pond contains water at least seasonally and is therefore treated as an RPW above. Wetland 23 is created by an earthen berm across an upland swale. Wetland 23 is treated as a wetland adjacent to a non-RPW above because it is in the watershed of Channel 2.

H. Isolated (interstate or intrastate) waters, including isolated wetlands

Wetlands 2, 5, 6, 8–18, 20–22, and 25 are low spots in previously graded areas or dirt roads that do not appear to ever inundate enough to drain to other areas or features in the BSA. These wetlands are isolated.

I. Non-jurisdictional waters

The ephemeral channels, and the wetlands with the exception of Wetland 3, are either isolated or have no more than a speculative or insubstantial nexus to the nearest downstream TNW.

J. Summary of Jurisdictional Acreages

The intermittent channels and pond are RPWs presumed to have a substantial nexus to the nearest downstream TNW (Corps 2008). Wetland 3 is also presumed to have a substantial nexus because it may trap or filter pollutants from an upstream urbanized area prior to reaching the intermittent reach of Channel 1.

Table 3. Rapanos Guidance Correlation of Wetlands and Waters

Feature	Rapanos Guidance Correlation	Jurisdictional Acreage	Non-Jurisdictional Acreage
Channel 1 (ephemeral)	Non-RPW	--	0.011
Channel 1 (intermittent)	RPW	0.545	--
Channel 1a	Non-RPW	--	0.009
Channel 1b	Non-RPW	--	0.008
Channel 1c	Non-RPW	--	0.020
Channel 1d	Non-RPW	--	0.043
Channel 1e	Non-RPW	--	0.001
Channel 1f	Non-RPW	--	0.001
Channel 2 (ephemeral)	Non-RPW	--	0.170
Channel 2 (intermittent)	RPW	0.083	--
Channel 2a	Non-RPW	--	0.006
Channel 2b	Non-RPW	--	0.023
Channel 2c	Non-RPW	--	0.014
Channel 2d	Non-RPW	--	0.009
Channel 2e	Non-RPW	--	0.008
Channel 2f	Non-RPW	--	0.007
Channel 2g	Non-RPW	--	0.005
Channel 2h	Non-RPW	--	0.008
Channel 2i	Non-RPW	--	0.005
Channel 3	Non-RPW	--	0.004
Pond	RPW	0.384	--
Wetland 1	Wetland adjacent to RPW	--	0.070
Wetland 2	Isolated	--	0.079
Wetland 3	Wetland adjacent to RPW	0.073	--
Wetland 4	Wetland adjacent to non-RPW	--	0.070
Wetland 5	Isolated	--	0.009
Wetland 6	Isolated	--	0.007
Wetland 7	Wetland adjacent to non-RPW	--	0.042
Wetland 8	Isolated	--	0.005
Wetland 9	Isolated	--	0.005
Wetland 10	Isolated	--	0.023
Wetland 11	Isolated	--	0.041
Wetland 12	Isolated	--	0.009
Wetland 13	Isolated	--	0.009
Wetland 14	Isolated	--	0.012

Table 3. (Continued)

Feature	Rapanos Guidance Correlation	Jurisdictional Acreage	Non-Jurisdictional Acreage
Wetland 15	Isolated	--	0.013
Wetland 16	Isolated	--	0.018
Wetland 17	Isolated	--	0.018
Wetland 18	Isolated	--	0.006
Wetland 19	Wetland adjacent to non-RPW	--	0.111
Wetland 20	Isolated	--	0.004
Wetland 21	Isolated	--	0.242
Wetland 22	Isolated	--	0.065
Wetland 23	Wetland adjacent to non-RPW	--	0.093
Wetland 24	Wetland adjacent to non-RPW	--	0.051
Wetland 25	Isolated	--	0.011
Wetland 26	Wetland adjacent to non-RPW	--	0.034
Total:		**1.085**	**1.399**

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VII. REPORT PREPARERS

Chuck Hughes, M.S., Plant Biology, Michigan State University, East Lansing, MI. Fifteen years of experience preparing biological/botanical resource evaluations, wetland delineations, arborist reports, impact analyses, and mitigation/restoration plans. He is a Professional Wetland Scientist (#2029), an ISA Certified Arborist (WE-6885A), holds a CDFW Plant Voucher Collecting Permit (2081(a)-12-16-V), is a Principal Scientific Investigator on a CDFW Scientific Collecting Permit (SC-7617), and is on a USFWS recovery permit for listed vernal pool branchiopods (TE799564-4). His bachelor's degree from UC Davis is in environmental horticulture and urban forestry, with an emphasis in plant biodiversity.
Responsibilities: Project manager, fieldwork, report preparation.

Nicole Desideri, B.S., Biological Sciences (concentration in Field and Wildlife Biology), California Polytechnic State University, San Luis Obispo, CA. Ms. Desideri conducts preconstruction and construction monitoring, assists with plant and wildlife surveys, wetland delineations, and assists with preparation of biological resource evaluations, Natural Environment Study reports, permit applications, and other documents used in the CEQA/NEPA process. Serving as both field biologist and technical writer, she conducts database research on special status species' biology, habitat and distribution. She assists with mapping and figure preparation for biological and permitting documents such as project location maps, aerial photograph exhibits, soils maps, biological resource maps, wetlands/waters delineation maps, tree location maps and other supporting graphics. She holds a California Department of Fish and Wildlife Rare, Threatened and Endangered Plant Voucher Collecting Permit (2081(a)-16-107-V) and is an authorized individual on the CDFW Scientific Collecting Permit (SC-7617).
Responsibilities: Fieldwork, Report preparation

Aramis Respall, GIS Analyst/ CAD Operator. Over 20 years of experience in drafting and spatial analysis using AutoCAD and ArcGIS for public and private projects. He prepares figures for biological and permitting documents such as project location maps, aerial photograph exhibits, biological resource maps, CNDDB proximity maps, wetlands/waters delineation maps, impact analysis maps, tree location maps and other supporting graphics. Mr. Respall provides geospatial analysis and support for projects involving geodesy, hydrology, watersheds, project impact analysis, CNDDB occurrences, and critical habitat information. Primary experience evolved from conventional surveying and civil engineering practices to advanced GPS and GIS based technology.
Responsibilities: Figure preparation and spatial analysis.

Jeffery Little, Vice President, Sycamore Environmental.
Responsibilities: Principal in charge.

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Appendix A

Data Sheets

Stonehenge Springs

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WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 6/27/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **1**
Investigator(s): Chuck Hughes, Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Roadside swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	-		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	-		
Herb Stratum: (Plot size:__2' x 6'____)			
1. *Festuca perennis*	20	D	FAC
2. *Cynodon dactylon*	10		FACU
3. *Hordeum marinum ssp. gussoneanum*	68	D	FAC
4. *Holcus lanatus*	1		FAC
5. *Cyperus eragrostis*	1		FACW
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	-		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Disturbed road edge

SOIL

Sampling Point: **1**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 3/2	95	7.5 YR 4/6	5	C	PL	Silt loam	
2-10	10 YR 3/2	100	--				Silt loam	
>10							gravel	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: Surface horizon too thin to meet F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 6/27/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **2**
Investigator(s): Chuck Hughes, Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____5' rad_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	20	D	FACU
2.			
3.			
4.			
Total Cover:	20		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:___5' rad_____)			
1. *Phalaris aquatica*	8		FACU
2. *Lactuca serriola*	5		FACU
3. *Briza minor*	1		FAC
4. *Festuca perennis*	80	D	FAC
5. *Daucus carota*	10		UPL
6. *Torilis arvensis*	5		UPL
7.			
8.			
Total Cover:	109		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **2**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 3/3	100	--				Silty clay loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 6/27/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **3**
Investigator(s): Chuck Hughes, Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_5' rad_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	85	D	FACU
2.			
3.			
4.			
Total Cover:	85		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	-		

Herb Stratum: (Plot size:___5' rad_____)			
1. *Torilis arvensis*	10		UPL
2. *Vicia sativa*	10		FACU
3. *Festuca perennis*	70	D	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	90		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **3**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10 YR 3/2	98	10 YR 3/4	2	C	PL	Silt loam	
>13							rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: Redox too sparse to meet F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 6/27/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **4**
Investigator(s): Chuck Hughes, Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 3
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:__5' rad_____)			
1. *Baccharis pilularis*	2	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	2		

Herb Stratum: (Plot size:__5' rad_____)			
1. *Juncus balticus*	85	D	FACW
2. *Torilis arvensis*	6		UPL
3. *Galium aparine*	5		FACU
4. *Asclepias fascicularis*	5		FAC
5. *Hypericum perforatum*	1		FACU
6. *Geranium dissectum*	2		UPL
7.			
8.			
Total Cover:	104		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: shrub layer ignored due to less than 5% cover.

SOIL

Sampling Point: **4**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 4/2	100	--				Silty clay loam	
6-12	10 YR 4/2	90	7.5 YR 3/4	10	C	M	Silty clay loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: Other colored rock fragments, in 6-12 inch horizon.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Small swale, ill-defined, draining through this patch of Juncus.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **5**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad_____)			
1. *Festuca perennis*	85	D	FAC
2. *Bromus diandrus*	3		UPL
3. *Hordeum murinum* ssp. *leporinum*	3		FACU
4. *Geranium dissectum*	2		UPL
5. *Lythrum hyssopiifolia*	1		OBL
6. *Torilis arvensis*	1		UPL
7.			
8.			
Total Cover:	95		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **5**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/3	100	--				Silt loam	Rocky
4-12	7.5 YR 4/4	100	--				Silt loam	Rocky

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **6**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: R4SBC
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:_6' rad_____)			
1. *Festuca perennis*	80	D	FAC
2. *Bromus hordeaceus*	4		FACU
3. *Carduus pycnocephalus*	8		UPL
4. *Mimulus guttatus*	4		OBL
5. *Hordeum marinum* ssp. *gussoneanum*	2		FAC
6.			
7.			
8.			
Total Cover:	98		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **6**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: 7
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex-concave Slope (%): 10
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒		
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area	
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐ No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:____6' rad____)			
1. *Festuca perennis*	50	D	FAC
2. *Bromus hordeaceus*	25	D	FACU
3. *Centaurea solstitialis*	10		UPL
4. *Bromus diandrus*	20		UPL
5.			
6.			
7.			
8.			
Total Cover:	105		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **7**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 4/3	100					Silt loam	
6-12	10 YR 3/3	95	7.5 YR 4/3	5	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

Matrix insufficiently depleted to meet F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **8**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Convex-concave Slope (%): 7
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:____6' rad____)			
1. *Festuca perennis*	10	D	FAC
2. *Carduus pycnocephalus*	10	D	UPL
3. *Cynosurus echinatus*	8	D	UPL
4. *Bromus hordeaceus*	8	D	FACU
5. *Trifolium hirtum*	5		UPL
6. *Trifolium glomeratum*	3		UPL
7. *Trifolium dubium*	3		UPL
8. *Centaurea solstitialis*	3		UPL
Total Cover:	50		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **8**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **9**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex-concave Slope (%): 8
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:___6' rad_____)			
1. *Elymus glaucus*	15	D	FACU
2. *Cynosurus echinatus*	25	D	UPL
3. *Trifolium dubium*	10		UPL
4. *Bromus hordeaceus*	10		FACU
5. *Bromus diandrus*	15	D	UPL
6. *Galium parisiense*	2		UPL
7. *Sanicula crassicaulis*	5		UPL
8. *Luzula comosa*	2		FAC
Total Cover:	84		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **9**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 4/3	100	--				Silt loam	
>10							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **10**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex-concave Slope (%): 5
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:___6' rad_____)			
1. *Toxicodendron diversilobum*	10	D	FACU
2. *Cynosurus echinatus*	10	D	UPL
3. *Elymus glaucus*	3		FACU
4. *Torilis arvensis*	1		UPL
5. *Bromus diandrus*	1		UPL
6.			
7.			
8.			
Total Cover:	24		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **10**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	100	--					

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **11**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Closed depression in swale Local relief (concave, convex, none): Concave-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad_____)			
1. *Lythrum portula*	70	D	OBL
2. *Polygonum aviculare*	2		FAC
3. *Juncus balticus*	10		FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	82		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **11**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/2	92	7.5 YR 4/6	8	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **12**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad_____)

1. *Elymus caput-medusae*	70	D	UPL
2. *Centaurea solstitialis*	20		UPL
3. *Bromus hordeaceus*	15		FACU
4. *Aira caryophyllea*	5		FACU
5.			
6.			
7.			
8.			
Total Cover:	110		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **12**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **13**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Seasonal pond Local relief (concave, convex, none): Concave-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad_____)			
1. *Lythrum portula*	15	D	OBL
2. *Polypogon monspeliensis*	5	D	FACW
3. *Festuca perennis*	1		FAC
4. *Polygonum aviculare*	1		FAC
5.			
6.			
7.			
8.			
Total Cover:	22		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **13**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 4/3	92	7.5 YR 4/6	8	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **14**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:____6' rad_____)			
1. *Festuca perennis*	80	D	FAC
2. *Juncus balticus*	20		FACW
3. *Bromus hordeaceus*	1		FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	101		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **14**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	94	7.5 YR 4/6	6	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **15**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad_____)

1. *Festuca perennis*	30	D	FAC
2. *Bromus hordeaceus*	10		FACU
3. *Mimulus guttatus*	5		OBL
4. *Hordeum marinum ssp. gussoneanum*	5		FAC
5. *Centaurea solstitialis*	20	D	UPL
6. *Elymus caput-medusae*	20	D	UPL
7.			
8.			
Total Cover:	90		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **15**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	94	7.5 YR 4/6	6	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 8/8/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **16**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum:
Soil Map Unit Name: Diamond Springs very rocky very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:___6' rad_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	30	D	FACU
2.			
3.			
4.			
Total Cover:	30		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad_____)

1. *Bromus diandrus*	35	D	UPL
2. *Geranium dissectum*	10		UPL
3. *Festuca perennis*	15	D	FAC
4. *Torilis arvensis*	10		UPL
5.			
6.			
7.			
8.			
Total Cover:	70		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **16**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/3	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **17**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____6' rad_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix exigua*	30	D	FACW
2.			
3.			
4.			
Total Cover:	30		
Sapling/Shrub Stratum: (Plot size:___6' rad_____)			
1. *Rubus armeniacus*	5	D	FAC
2.			
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum: (Plot size:___6' rad_____)			
1. *Poa pratensis*	10		FAC
2. *Festuca perennis*	60	D	FAC
3. *Quercus lobata* (saplings)	1		FACU
4. *Juncus balticus*	1		FACW
5.			
6.			
7.			
8.			
Total Cover:	72		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		
% Bare Ground in Herb Stratum 30	% Cover of Biotic Crust --		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **17**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 5/3	90	10 YR 5/6	10	C	M	Silt loam	
4-12	10YR 4/3	80	7.5YR 3/4	20	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: Matrix color does not meet F3 or F6. Not in a closed depression (F8).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **18**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: R4SBC
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____6' rad_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus cerasifera*	10	D	UPL
2.			
3.			
4.			
Total Cover:	10		

Sapling/Shrub Stratum: (Plot size:___6' rad_____)

1. *Rubus armeniacus*	80	D	FAC
2. *Salix exigua*	20	D	FACW
3.			
4.			
5.			
Total Cover:	100		

Herb Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	--		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **18**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 3/2	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **19**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: R4SBC
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:___6' rad_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix exigua*	30	D	FACW
2.			
3.			
4.			
Total Cover:	30		

Sapling/Shrub Stratum: (Plot size:___6' rad_____)

1. *Rubus armeniacus*	20	D	FAC
2.			
3.			
4.			
5.			
Total Cover:	20		

Herb Stratum: (Plot size:____6' rad_____)

1. *Juncus balticus*	25	D	FACW
2. *Rumex crispus*	3		FAC
3. *Festuca perennis*	15	D	FAC
4. *Torilis arvensis*	5		UPL
5. *Polygonum aviculare*	1		FAC
6. *Bromus hordeaceus*	3		FACU
7.			
8.			
Total Cover:	52		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **19**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	100	--				Silt loam	
5-12	10YR 3/3	100	--				Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **20**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: R4SBC
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:____6' rad_____)			
1. *Rubus armeniacus*	15	D	FAC
2.			
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum: (Plot size:____6' rad_____)			
1. *Carex barbarae*	80	D	FAC
2. *Juncus balticus*	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **20**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	--				Silt loam	
5-10	2.5Y 4/2	95	10YR 4/4	5	C	M	Silt loam	Many cobbles
>10							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☒ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Fines on leaves near soil surface.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **21**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 3
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:___6' rad_____)			
1. *Festuca perennis*	90	D	FAC
2. *Rumex conglomeratus*	1		FACW
3. *Hordeum marinum* ssp. *gussoneanum*	5		FAC
4. *Bromus hordeaceus*	3		FACU
5.			
6.			
7.			
8.			
Total Cover:	99		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **21**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	100	--				Silt loam	
5-12	10YR 4/3	93	7.5YR 3/4	7	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **22**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☒, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad_____)			
1. *Carex barbarae*	50	D	FAC
2. *Persicaria* sp. (at least FACW)	15	D	FACW
3. *Rumex conglomeratus*	7		FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	72		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **22**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☐

Remarks: No soil profile development. Substrate is recently deposited sand and silt from small channel. Culvert at nearby road has likely altered hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **23**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad_____)			
1. *Carex praegracilis*	90	D	FACW
2. *Juncus balticus*	15		FACW
3. *Cirsium vulgare*	2		FACU
4. *Carex barbarae*	15		FAC
5.			
6.			
7.			
8.			
Total Cover:	122		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **23**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100	--				Silt loam	Rocky below 8 inches

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **24**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-concave Slope (%): 3
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad____)

1. *Juncus balticus*	85	D	FACW
2. *Carex barbarae*	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **24**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					Silt loam	Rocky below 4 inches

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **25**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-concave Slope (%): 2
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad_____)

1. *Carex praegracilis*	70	D	FACW
2. *Rumex conglomeratus*	7		FACW
3. *Persicaria* sp. (at least FACW)	3		FACW
4. *Polygonum aviculare*	3		FAC
5.			
6.			
7.			
8.			
Total Cover:	83		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **25**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100	--				Silt loam	Rocky below 8 inches

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/7/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **26**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Mixed alluvial land NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☐ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:___6' rad____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	15	D	FACU
2.			
3.			
4.			
Total Cover:	15		
Sapling/Shrub Stratum: (Plot size:___6' rad_____)			
1. *Salix exigua*	5	D	FACW
2. *Rubus armeniacus*	10	D	FAC
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum: (Plot size:__6' rad_____)			
1. *Anthoxanthum odoratum*	30	D	FAC
2. *Cynosurus echinatus*	20	D	UPL
3. *Cyperus eragrostis*	5		FACW
4. *Festuca perennis*	20	D	FAC
5. *Carex tumulicola*	10		FACU
6. *Rumex crispus*	3		FAC
7. *Elymus caput-medusae*	7		UPL
8.			
Total Cover:	95		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **26**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	92	7.5YR 4/6	8	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **27**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Road cut Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad___)

1. *Festuca perennis*	55	D	FAC
2. *Elymus caput-medusae*	20		UPL
3. *Bromus hordeaceus*	15		FACU
4. *Juncus balticus*	8		FACW
5. *Cichorium intybus*	3		FACU
6. *Rumex crispus*	2		FAC
7. *Holocarpha virgata*	1		UPL
8.			
Total Cover:	104		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **27**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 6/2	90	10YR 5/8	10	C	M	Clay loam	Rocky
4-12	10YR 3/3	100	--				Clay loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: DP is in an old roadcut and is very disturbed and mixed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **28**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Graded area Local relief (concave, convex, none): Linear-linear Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Placer diggings NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____6' rad____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	15	D	FACU
2.			
3.			
4.			
Total Cover:	15		

Sapling/Shrub Stratum: (Plot size:__6' rad_____)

1. *Baccharis pilularis*	5	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	5		

Herb Stratum: (Plot size:___6' rad_____)

1. *Juncus balticus*	65	D	FACW
2. *Bromus hordeaceus*	10		FACU
3. *Torilis arvensis*	2		UPL
4. *Elymus caput-medusae*	5		UPL
5. *Aira caryophyllea*	2		FACU
6. *Cynosurus echinatus*	4		UPL
7. *Festuca perennis*	2		FAC
8. *Briza minor*	1		FAC
Total Cover:	91		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **28**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/4	100	--				Silt loam	
>6							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: Data point is in an area previously graded flat, with little soil remaining over bedrock

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **29**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Graded area Local relief (concave, convex, none): Concave-concave Slope (%): 0
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Placer diggings NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☒, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks: DP in depression in disturbed area.

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:__6' rad___)			
1. *Eleocharis macrostachya*	10	D	OBL
2. *Poa pratensis*	7	D	FAC
3. *Juncus dubius*	3		FACW
4. *Juncus occidentalis*	5	D	FACW
5.			
6.			
7.			
8.			
Total Cover:	25		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 75

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **29**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 7/3	90	7.5 YR 5/6	10	C	M	Silt loam	
>5							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Thin crust of dried algae on surface.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **30**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Graded area Local relief (concave, convex, none): Linear-linear Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Placer diggings NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☒, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:___6' rad____)			
1. *Arctostaphylos viscida*	5	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum: (Plot size:__6' rad____)			
1. *Arctostaphylos viscida*	10	D	UPL
2. *Acmispon americanus*	10	D	UPL
3. *Poa pratensis*	8	D	FAC
4. *Aira caryophyllea*	2		FACU
5.			
6.			
7.			
8.			
Total Cover:	30		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **30**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☐

Remarks: Very hard and compacted; hit rock within 2 inches. Could not dig soil pit. This flat area has been graded and bedrock is near surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **31**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave-concave Slope (%): 0
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☒, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks: DP in small depression that may pond a few inches deep.

VEGETATION

Tree Stratum: (Plot size:_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___3' rad_____)

1. *Deschampsia danthonoides*	15	D	FACW
2. *Hordeum murinum* ssp. *gussoneanum*	5		FAC
3. *Holocarpha virgata*	5		UPL
4. *Festuca perennis*	1		FAC
5.			
6.			
7.			
8.			
Total Cover:	26		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust 70

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **31**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y 6/3	95	10YR 5/6	5	C	M	Silt loam	
>1							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: Very little soil over bedrock. With another inch of soil, this DP would meet the thickness requirement of F8.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **32**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex-linear Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: none
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____6' rad___)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus wislizeni*	10	D	UPL
2.			
3.			
4.			
Total Cover:	10		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___6' rad____)

1. *Madia elegans*	10	D	UPL
2. *Elymus caput-medusae*	5		UPL
3. *Bromus diandrus*	15	D	UPL
4. *Bromus hordeaceus*	10	D	FACU
5. *Plantago lanceolata*	5		FAC
6.			
7.			
8.			
Total Cover:	45		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **32**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 5/4	100	--				Silt loam	
>5							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **33**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave-concave Slope (%): 0
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☒, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:__6' rad__)			
1. *Lythrum portula*	30	D	OBL
2. *Festuca perennis*	20	D	FAC
3. *Centromadia* sp.	7		UPL
4. *Eryngium castrense*	2		OBL
5. *Eleocharis macrostachya*	2		OBL
6. *Polypogon monspeliensis*	2		FACW
7.			
8.			
Total Cover:	63		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 10

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL Species: _____ x 1 = _____
FACW Species _____ x 2 = _____
FAC Species _____ x 3 = _____
FACU Species _____ x 4 = _____
UPL Species _____ x 5 = _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **33**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 6/3	93	7/5YR 5/6	7	C	M/ PL	Silt loam	
>8							rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: Data Point is in a graded area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Algal mat on soil surface

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **34**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Road cut Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____6' rad___)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	15	D	FACU
2.			
3.			
4.			
Total Cover:	15		

Sapling/Shrub Stratum: (Plot size:_____)

1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:_6' rad_____)

1. *Festuca perennis*	70	D	FAC
2. *Madia elegans*	5		UPL
3. *Rumex crispus*	1		FAC
4. *Briza minor*	3		FAC
5. *Bromus hordeaceus*	3		FACU
6.			
7.			
8.			
Total Cover:	82		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **34**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/4	93	10YR 5/8	7	C	M	Silt loam	
>10							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Patchy algal crust on surface.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **35**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): Linear-linear Slope (%): 1
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:___6' rad____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1. *Pinus ponderosa*	5	D	FACU
2.			
3.			
4.			
Total Cover:	5		
Sapling/Shrub Stratum: (Plot size:___6' rad__)			
1. *Baccharis pilularis*	5	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum: (Plot size:__6' rad__)			
1. *Juncus balticus*	80	D	FACW
2. *Anthoxanthum odoratum*	15		FAC
3. *Briza minor*	1		FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	96		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **35**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 6/4	97	7.5YR 5/8	3	C	M	Silt loam	
>4							rocky	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks: Soil is thin and contains much weathered rock. Area has likely been graded before, similar to other areas on this site.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **36**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Dirt road Local relief (concave, convex, none): Concave-concave Slope (%): 0
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐			
Hydric Soil Present?	Yes ☒	No ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks: Low spot in dirt road.

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		

Herb Stratum: (Plot size:___4' rad_____)			
1. *Eleocharis macrostachya*	20	D	OBL
2. *Crypsis schoenoides*	2		FACW
3. *Alisma triviale*	3		OBL
4. *Poa pratensis*	2		FAC
5. *Kickxia elatine*	1		UPL
6.			
7.			
8.			
Total Cover:	28		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL Sampling Point: **36**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 5/4	95	7.5YR 5/8	5	C	M	Silt loam	
>5							Rock	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **37**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 3
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:___4' rad____)			
1. *Juncus balticus*	40	D	FACW
2. *Elymus caput-medusae*	30	D	UPL
3. *Bromus hordeaceus*	20	D	FACU
4. *Geranium dissectum*	5		UPL
5.			
6.			
7.			
8.			
Total Cover:	95		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL Sampling Point: **37**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100	--				Silt loam	
4-12	10YR 4/3	93	5YR 4/6	7	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Stonehenge Springs City/County: El Dorado County Sampling Date: 9/13/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **38**
Investigator(s): Chuck Hughes Section, Township, Range: See report
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear-concave Slope (%): 3
Subregion (LRR): C Lat: See report Long: See report Datum: See report
Soil Map Unit Name: Diamond Springs very fine sandy loam NWI Classification: None
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	--		
Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	--		
Herb Stratum: (Plot size:_____)			
1. *Festuca perennis*	40	D	FAC
2. *Elymus caput-medusae*	30	D	UPL
3. *Bromus hordeaceus*	25	D	FACU
4. *Trifolium dubium*	10		UPL
5.			
6.			
7.			
8.			
Total Cover:	105		
Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:	--		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **38**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/4	92	5YR 3/4	8	C	M	Silt loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Patchy algal mat present.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: 17047 Stonehenge Springs City/County: El Dorado Co Sampling Date: 9/15/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **DP 39**
Investigator(s): Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Linear-concave Slope (%): 4-5%
Subregion (LRR): See report Lat: See report Long: See report Datum: See report
Soil Map Unit Name: NWI Classification:
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____5'rad_____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	20	D	FACU
2. *Quercus kelloggii*	30	D	UPL
3.			
4.			
Total Cover:	50		

Sapling/Shrub Stratum: (Plot size:____5'rad__ __)

1. *Quercus wislizeni*	5	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	5		

Herb Stratum: (Plot size:___5'rad_____)

1. *Cynosurus echinatus*	1		UPL
2. *Rumex crispus*	2		FAC
3. *Torilis arvensis*	2		UPL
4. *Vinca major*	40	D	UPL
5.			
6.			
7.			
8.			
Total Cover:	45		

Woody Vine Stratum: (Plot size:_____)

1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: At confluence of 3 ephemeral channels

SOIL

Sampling Point: **DP 39**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					Fine loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: 17047 Stonehenge Springs City/County: El Dorado Co Sampling Date: 9/15/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **DP 40**
Investigator(s): Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave-linear Slope (%): 2
Subregion (LRR): See report Lat: See report Long: See report Datum: See report
Soil Map Unit Name: NWI Classification:
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____5'rad_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus kelloggii*	10	D	UPL
2. *Quercus wislizeni*	15	D	UPL
3.			
4.			
Total Cover:	25		
Sapling/Shrub Stratum: (Plot size:____-_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	-		
Herb Stratum: (Plot size:_____5'rad_____)			
1. *Carduus pycnocephalus*	5		UPL
2. *Cynosurus echinatus*	90	D	UPL
3. *Torilis arvensis*	2		UPL
4. *Elymus triticoides*	10		UPL
5. *Briza minor*	1		FAC
6.			
7.			
8.			
Total Cover:	108		
Woody Vine Stratum: (Plot size:_____-_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL Species: x 1 =
FACW Species x 2 =
FAC Species x 3 =
FACU Species x 4 =
UPL Species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **DP 40**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/2	97	7.5 YR 5/8	3	C	M	loam	
4+	10 YR 5/3	90	7.5YR 5/8	10	C	M	rock	Restrictive layer – see notes

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rock

Depth (inches): 4 inches

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: Broke off some chunks of rock and took color data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks: Grass matted down.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: 17047 Stonehenge Springs City/County: El Dorado Co Sampling Date: 9/15/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **DP 41**
Investigator(s): Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): linear Slope (%): 5
Subregion (LRR): See report Lat: See report Long: See report Datum: See report
Soil Map Unit Name: NWI Classification:
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:____5'rad_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1. *Quercus kelloggii*	40	D	UPL
2. *Quercus lobata*	20	D	FACU
3.			
4.			
Total Cover:	60		
Sapling/Shrub Stratum: (Plot size:____-_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	-		
Herb Stratum: (Plot size:_____5'rad_____)			
1. *Cynosurus echinatus*	10		UPL
2. *Deschampsia danthanoides*	15		FACW
3. *Festuca perennis*	80	D	FAC
4. *Carduus pycnocephalus*	2		UPL
5. *Hordeum murinum*	2		FACU
6. *Toxicodendron diversilobum*	1		FACU
7. *Torilis arvensis*	1		UPL
8.			
Total Cover:	121		
Woody Vine Stratum: (Plot size:_____-_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL Species: x 1 =
FACW Species x 2 =
FAC Species x 3 =
FACU Species x 4 =
UPL Species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **DP 41**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/4	97	7.5YR 6/8	3	C	M	loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☒ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: 17047 Stonehenge Springs City/County: El Dorado Co Sampling Date: 9/15/17
Applicant/Owner: Stonehenge Springs LLC State: CA Sampling Point: **DP 42**
Investigator(s): Nicole Desideri Section, Township, Range: See report
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): linear Slope (%): 7%
Subregion (LRR): See report Lat: See report Long: See report Datum: See report
Soil Map Unit Name: NWI Classification:
Are climatic/hydrologic conditions on the site typical for this time of the year? Yes ☒ No ☐ (If no, explain in remarks.)
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐ Soil ☐, Or Hydrology ☐ Naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☐	No ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: (Plot size:_____-_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:	-		

Sapling/Shrub Stratum: (Plot size:_____-_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	-		

Herb Stratum: (Plot size:_____5'rad_____)			
1. *Centaurea solstitialis*	12		UPL
2. *Trifolium hirtum*	40	D	UPL
3. *Avena* sp.	60	D	UPL
4. *Elymus triticoides*	1		UPL
5. *Deschampsia danthonioides*	2		FACW
6.			
7.			
8.			
Total Cover:	115		

Woody Vine Stratum: (Plot size:_____-_____)			
1.			
2.			
Total Cover:	-		

% Bare Ground in Herb Stratum 8 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species	x 2 =	
FAC Species	x 3 =	
FACU Species	x 4 =	
UPL Species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **DP 42**

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR3/3	97	7.5YR3/1	2	D	M	loam	
0-10			5YR5/8	1	C	M	loam	

[1]Type : C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface water (A1)
- ☐ High water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☒ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible-Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available:

Remarks:

Appendix B

Photographs

Stonehenge Springs



Photo 1. View of the valley oak woodland community in the center of the BSA. Stonehenge Springs is characterized by oak woodlands, grassland, dirt roads and disturbed areas (13 June 2017).



Photo 2. View west of ephemeral Channel 2g. Oak woodlands surround this channel bed composed of cobble, gravel and bedrock (8 August 2017).



Photo 3. View looking downstream of the intermittent section of Channel 2, on the south side of the BSA (8 August 2017).



Photo 4. View of Channel 2, with standing water seeping out from among small bedrock outcrops, near the confluence of Channel 2e (27 June 2017).



Photo 5. View looking south at Wetland 23. The shovel is at DP 13 (8 August 2017).



Photo 6. View west of Wetland 3. The shovel is at DP 20 (7 September 2017).



Photo 7. View northwest of the intermittent portion of Channel 1. Water was present during fieldwork in this reach (7 September 2017).



Photo 8. View of the pond on the northwest side of the BSA. The pond had shallow water during fieldwork (13 September 2017).



Photo 9. View northeast of Wetland 2. The shovel is at DP 29. This wetland is part of the large area in the northern part of the BSA that was previously graded, and contains low spots with poor drainage.

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Appendix C

Plant Species Recorded at Data Points

Stonehenge Springs

Family	Scientific Name	Common Name	Stratum[1]	Indicator[2]
GYMNOSPERMS				
Pinaceae	*Pinus ponderosa*	Ponderosa pine	T	FACU
EUDICOTS				
Anacardiaceae	*Toxicodendron diversilobum*	Poison oak	H	FACU
Apiaceae	*Daucus carota*	Carrot, Queen Anne's lace	H	UPL
	Eryngium castrense	Great Valley coyote-thistle	H	OBL
	Sanicula crassicaulis	Sanicula	H	UPL
	Torilis arvensis	Hedge parsley	H	UPL
Apocynaceae	*Asclepias fascicularis*	Narrow-leaf milkweed	H	FAC
	Vinca major	Greater periwinkle	H	UPL
Asteraceae	*Baccharis pilularis*	Coyote brush	S	UPL
	Carduus pycnocephalus	Italian thistle	H	UPL
	Centaurea solstitialis	Yellow star thistle	H	UPL
	Centromadia sp.	Spikeweed	H	UPL
	Cichorium intybus	Chicory	H	FACU
	Cirsium vulgare	Bull thistle	H	FACU
	Holocarpha virgata	Tarweed, tarplant	H	UPL
	Lactuca serriola	Prickly lettuce	H	FACU
	Madia elegans	Common madia	H	UPL
Ericaceae	*Arctostaphylos viscida*	Manzanita	S/H	UPL
Fabaceae	*Acmispon americanus*	Deervetch, deerweed	H	UPL
	Trifolium dubium	Little hop clover	H	UPL
	Trifolium glomeratum	Clover	H	UPL
	Trifolium hirtum	Rose clover	H	UPL
	Vicia sativa	Vetch	H	FACU
Fagaceae	*Quercus kelloggii*	Black oak	T	UPL
	Quercus lobata	Valley oak	T	FACU
	Quercus wislizeni	Interior live oak	T/S	UPL
Geraniaceae	*Geranium dissectum*	Cranesbill, geranium	H	UPL
Hypericaceae	*Hypericum perforatum* ssp. *perforatum*	Klamathweed	H	FACU
Lythraceae	*Lythrum hyssopifolia*	Loosestrife	H	OBL
	Lythrum portula	Loosestrife	H	OBL
Phrymaceae	*Mimulus guttatus*	Monkeyflower	H	OBL
Plantaginaceae	*Kickxia elatine*	Kickxia	H	UPL
	Plantago lanceolata	English plantain	H	FAC
Polygonaceae	*Persicaria* sp.	Smartweed	H	FACW
	Polygonum aviculare	Knotweed	H	FAC
	Rumex conglomeratus	Dock	H	FACW
	Rumex crispus	Curly dock	H	FAC
Rosaceae	*Prunus cerasifera*	Cherry plum	T	UPL
	Rubus armeniacus	Himalayan blackberry	S	FAC
Rubiaceae	*Galium aparine*	Goose grass	H	FACU
	Galium parisiense	Wall bedstraw	H	UPL
Salicaceae	*Salix exigua*	Willow	T/S	FACW

MONOCOTS				
Alismataceae	*Alisma triviale*	Water-plantain	H	OBL
Cyperaceae	*Carex barbarae*	Whiteroot sedge	H	FAC
	Carex praegracilis	Black creeper or freeway sedge	H	FACW
	Carex tumulicola	Foothill sedge	H	FACU
	Cyperus eragrostis	Nutsedge	H	FACW
	Eleocharis macrostachya	Spikerush	H	OBL
Juncaceae	*Juncus balticus*	Baltic rush	H	FACW
	Juncus dubius	Mariposa rush	H	FACW
	Juncus occidentalis	Western rush	H	FACW
	Luzula comosa	Hairy wood rush	H	FAC
Poaceae	*Aira caryophyllea*	Silver hair grass	H	FACU
	Anthoxanthum odoratum	Sweet vernal grass	H	FAC
	Avena sp.	Wild oat	H	UPL
	Briza minor	Annual quaking grass	H	FAC
	Bromus diandrus	Ripgut grass	H	UPL
	Bromus hordeaceus	Soft chess	H	FACU
	Crypsis schoenoides	Swamp prickle grass	H	FACW
	Cynodon dactylon	Bermuda grass	H	FACU
	Cynosurus echinatus	Hedgehog dog-tail	H	UPL
	Deschampsia danthonoides	Annual hair grass	H	FACW
	Elymus caput-medusae	Medusa head	H	UPL
	Elymus glaucus	Blue or Western wild rye	H	FACU
	Elymus triticoides	Beardless wild rye	H	UPL
	Festuca perennis (=*Lolium perenne*)	Rye grass	H	FAC
	Holcus lanatus	Velvet grass	H	FAC
	Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	H	FAC
	Hordeum murinum ssp. *leporinum*	Hare barley	H	FACU
	Phalaris aquatica	Harding grass	H	FACU
	Poa pratensis	Kentucky blue grass	H	FAC
	Polypogon monspeliensis	Annual beard grass	H	FACW

[1] H=herb; S=shrub; T=tree, WV=woody vine.

[2] Indicators from 2016 NWPL for the Arid West Region. Plant species not on the 2016 NWPL treated as UPL. Indicators for plants that could not be identified to species were assigned based on their most likely identity.

Appendix D

FEMA Flood Insurance Rate Map (FIRM)

Stonehenge Springs

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NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was California State Plane, Zone II. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the U.S. Geological Survey, 1989 and 1993, El Dorado County Surveyor Office, 2005, National Geodetic Survey, 2005, California Department of Forestry, 2004, and U.S. Bureau of Reclamation, 2003. Additional information was photogrammetrically compiled at a scale of 1:12,000 from U.S. Geological Survey aerial photography dated 1997 to 2001.

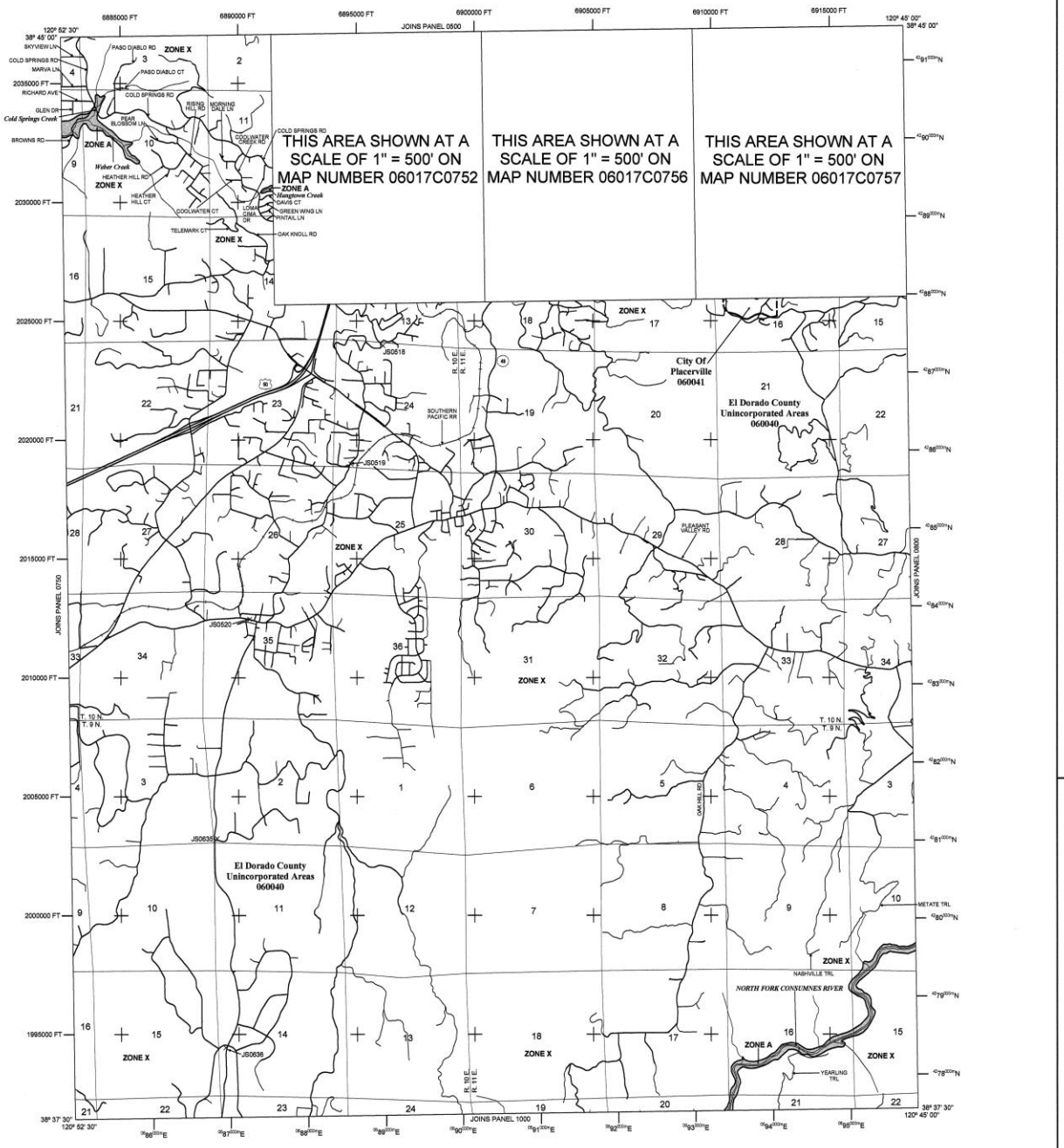
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the **base flood**, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid values, zone 10
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone II (FIPSZONE 0402), Lambert Conformal Conic Projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL
SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0775E

FIRM

FLOOD INSURANCE RATE MAP

EL DORADO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 775 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL DORADO COUNTY	060040	0775	E
PLACERVILLE, CITY OF	060041	0775	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 06017C0775E

EFFECTIVE DATE SEPTEMBER 26, 2008

Federal Emergency Management Agency

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Appendix E

Aquatic Resources Table

Stonehenge Springs

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Waters Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amounts	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Channel 1 (ephemeral)	CALIFORNIA	R4SB3A		Area	0.011	ACRE	DELINEATE	38.69029756	-120.816878	Datum is WGS84
Channel 1 (intermittent)	CALIFORNIA	R4SB3C		Area	0.545	ACRE	DELINEATE	38.68792618	-120.817469	
Channel 1a	CALIFORNIA	R4SB3A		Area	0.009	ACRE	DELINEATE	38.68683746	-120.817877	
Channel 1b	CALIFORNIA	R4SB3A		Area	0.008	ACRE	DELINEATE	38.68702765	-120.817434	
Channel 1c	CALIFORNIA	R4SB3A		Area	0.02	ACRE	DELINEATE	38.68866367	-120.817540	
Channel 1d	CALIFORNIA	R4SB3A		Area	0.043	ACRE	DELINEATE	38.69002047	-120.815790	
Channel 1e	CALIFORNIA	R4SB3A		Area	0.001	ACRE	DELINEATE	38.68978575	-120.816216	
Channel 1f	CALIFORNIA	R4SB3A		Area	0.001	ACRE	DELINEATE	38.68975940	-120.816136	
Channel 2 (ephemeral)	CALIFORNIA	R4SB3A		Area	0.17	ACRE	DELINEATE	38.68179672	-120.820014	
Channel 2 (intermittent)	CALIFORNIA	R4SB3C		Area	0.083	ACRE	DELINEATE	38.67781489	-120.818404	
Channel 2a	CALIFORNIA	R4SB3A		Area	0.006	ACRE	DELINEATE	38.67772452	-120.818150	
Channel 2b	CALIFORNIA	R4SB3A		Area	0.023	ACRE	DELINEATE	38.67808145	-120.819076	
Channel 2c	CALIFORNIA	R4SB3A		Area	0.014	ACRE	DELINEATE	38.67763409	-120.819347	
Channel 2d	CALIFORNIA	R4SB3A		Area	0.009	ACRE	DELINEATE	38.67750723	-120.819464	
Channel 2e	CALIFORNIA	R4SB3A		Area	0.008	ACRE	DELINEATE	38.67875585	-120.818476	
Channel 2f	CALIFORNIA	R4SB3A		Area	0.007	ACRE	DELINEATE	38.68057532	-120.820246	
Channel 2g	CALIFORNIA	R4SB3A		Area	0.005	ACRE	DELINEATE	38.68106259	-120.819597	
Channel 2h	CALIFORNIA	R4SB3A		Area	0.008	ACRE	DELINEATE	38.68147288	-120.820478	
Channel 2i	CALIFORNIA	R4SB3A		Area	0.005	ACRE	DELINEATE	38.68239444	-120.820610	
Channel 3	CALIFORNIA	R4SB3A		Area	0.004	ACRE	DELINEATE	38.68036412	-120.817420	
Seasonal Pond	CALIFORNIA	PUBF		Area	0.384	ACRE	DELINEATE	38.68798529	-120.821363	
Wetland 1	CALIFORNIA	PEM1A		Area	0.07	ACRE	DELINEATE	38.69181877	-120.818028	
Wetland 2	CALIFORNIA	PEM1A		Area	0.079	ACRE	DELINEATE	38.69060468	-120.818994	
Wetland 3	CALIFORNIA	PEM1A		Area	0.073	ACRE	DELINEATE	38.69001924	-120.816938	
Wetland 4	CALIFORNIA	PEM1A		Area	0.07	ACRE	DELINEATE	38.69003371	-120.815555	
Wetland 5	CALIFORNIA	PEM1A		Area	0.009	ACRE	DELINEATE	38.68960256	-120.818164	
Wetland 6	CALIFORNIA	PEM1A		Area	0.007	ACRE	DELINEATE	38.68914179	-120.817403	
Wetland 7	CALIFORNIA	PEM1A		Area	0.042	ACRE	DELINEATE	38.68886764	-120.817986	
Wetland 8	CALIFORNIA	PEM1A		Area	0.005	ACRE	DELINEATE	38.68862749	-120.819660	
Wetland 9	CALIFORNIA	PEM1A		Area	0.005	ACRE	DELINEATE	38.68847315	-120.819433	
Wetland 10	CALIFORNIA	PEM1A		Area	0.023	ACRE	DELINEATE	38.68839639	-120.819091	
Wetland 11	CALIFORNIA	PEM1A		Area	0.041	ACRE	DELINEATE	38.68834330	-120.818933	
Wetland 12	CALIFORNIA	PEM1A		Area	0.009	ACRE	DELINEATE	38.68851787	-120.818610	
Wetland 13	CALIFORNIA	PEM1A		Area	0.009	ACRE	DELINEATE	38.68820863	-120.818632	
Wetland 14	CALIFORNIA	PEM1A		Area	0.012	ACRE	DELINEATE	38.68805923	-120.818686	
Wetland 15	CALIFORNIA	PEM1A		Area	0.013	ACRE	DELINEATE	38.68770583	-120.818717	
Wetland 16	CALIFORNIA	PEM1A		Area	0.018	ACRE	DELINEATE	38.68729161	-120.818886	
Wetland 17	CALIFORNIA	PEM1A		Area	0.018	ACRE	DELINEATE	38.68728162	-120.818593	
Wetland 18	CALIFORNIA	PEM1A		Area	0.006	ACRE	DELINEATE	38.68713046	-120.818855	

Wetland 19	CALIFORNIA	PEM1A	Area	0.111	ACRE	DELINEATE	38.68686778	-120.818194
Wetland 20	CALIFORNIA	PEM1A	Area	0.004	ACRE	DELINEATE	38.68599263	-120.817866
Wetland 21	CALIFORNIA	PEM1A	Area	0.242	ACRE	DELINEATE	38.68564280	-120.818382
Wetland 22	CALIFORNIA	PEM1A	Area	0.065	ACRE	DELINEATE	38.68530056	-120.818113
Wetland 23	CALIFORNIA	PEM1A	Area	0.093	ACRE	DELINEATE	38.68448265	-120.820355
Wetland 24	CALIFORNIA	PEM1A	Area	0.051	ACRE	DELINEATE	38.68379803	-120.820229
Wetland 25	CALIFORNIA	PEM1A	Area	0.011	ACRE	DELINEATE	38.68353456	-120.818618
Wetland 26	CALIFORNIA	PEM1A	Area	0.034	ACRE	DELINEATE	38.68197121	-120.818781

A-temporarily flooded (a few days/weeks in growing season)

C-seasonally flooded (at least a month in growing season)

Biological Resources Evaluation
and
Botanical Survey
for the
Stonehenge Springs Project

El Dorado County, CA

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8 May 2018

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Biological Resources Evaluation
and
Botanical Survey
for the
Stonehenge Springs Project

El Dorado County, CA

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I. SUMMARY OF FINDINGS AND CONCLUSIONS

This biological resources evaluation (BRE) was prepared for the Stonehenge Springs Project located in the unincorporated community of Diamond Springs in El Dorado County, CA. The approximately 143.83-acre Biological Study Area (BSA) consists mostly of oak woodland, grassland, and previously disturbed areas.

The BSA provides potential habitat for some species of special-status wildlife and plants that are considered during project review under the California Environmental Quality Act (CEQA). The BSA provides potential habitat for coast horned lizard. Western pond turtle could occur seasonally in the pond. Both coast horned lizard and western pond turtle are California Species of Special Concern. The BSA provides nesting habitat for birds regulated by State Fish and Game Code and listed under the Federal Migratory Bird Treaty Act (MBTA).

The BSA provides habitat for four special-status plant species. A botanical survey was conducted according to California Department of Fish and Wildlife guidelines. Three of the plant species were not found. A total of 88 shrubs of one of the species, Nissenan manzanita, were counted in the BSA.

Several natural communities occur in the BSA that are regulated under State and Federal law, or considered during CEQA review. Oak woodlands and trees are regulated by the County Oak Resources Management Plan. Waters and wetlands are regulated by State and Federal law, and impacts to them requires permitting. Impacts are also considered under CEQA. Sandbar willow scrub is a sensitive community in the BSA considered during CEQA review.

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II. INTRODUCTION

A. Purpose of Report

The purpose of this report is to document baseline biological resources in the BSA. This report may be used in support of permit applications and in the California Environmental Quality Act (CEQA) review process. Project design is in preparation and biological impacts will be prepared separately.

B. Project Location

The BSA is in Diamond Springs, an unincorporated community in El Dorado County, CA. The approximately 143.83-acre BSA is assessor's parcel numbers 054-402-18, 329-301-15, 329-301-20, 329-310-10, -11, and -12. The BSA is on the Placerville U.S. Geological Survey topographic quad (T10N, R10E, Section 25 and 36; T10N, R11E, Section 30 and 31; Figure 1), and is in the Upper Cosumnes hydrologic unit (18040013). Its centroid is 38.686355º north, 120.819115° west, UTM coordinate 689,690 meters E, 4,284,226 meters N, Zone 10S (WGS84). Figure 2 is an aerial photograph of the BSA and surrounding area.

El Dorado County parcel data indicates that the BSA is located in County rare plant mitigation zone 2, which is defined as the El Dorado Irrigation District Service Area. The BSA is outside the U.S. Fish and Wildlife Service (USFWS) recovery boundary for the Pine Hill plants (USFWS August 2002). The BSA is located outside the El Dorado County Important Biological Corridor (IBC) and Ecological Preserve (EP) overlay areas (El Dorado County 2004b).

C. Project Applicant

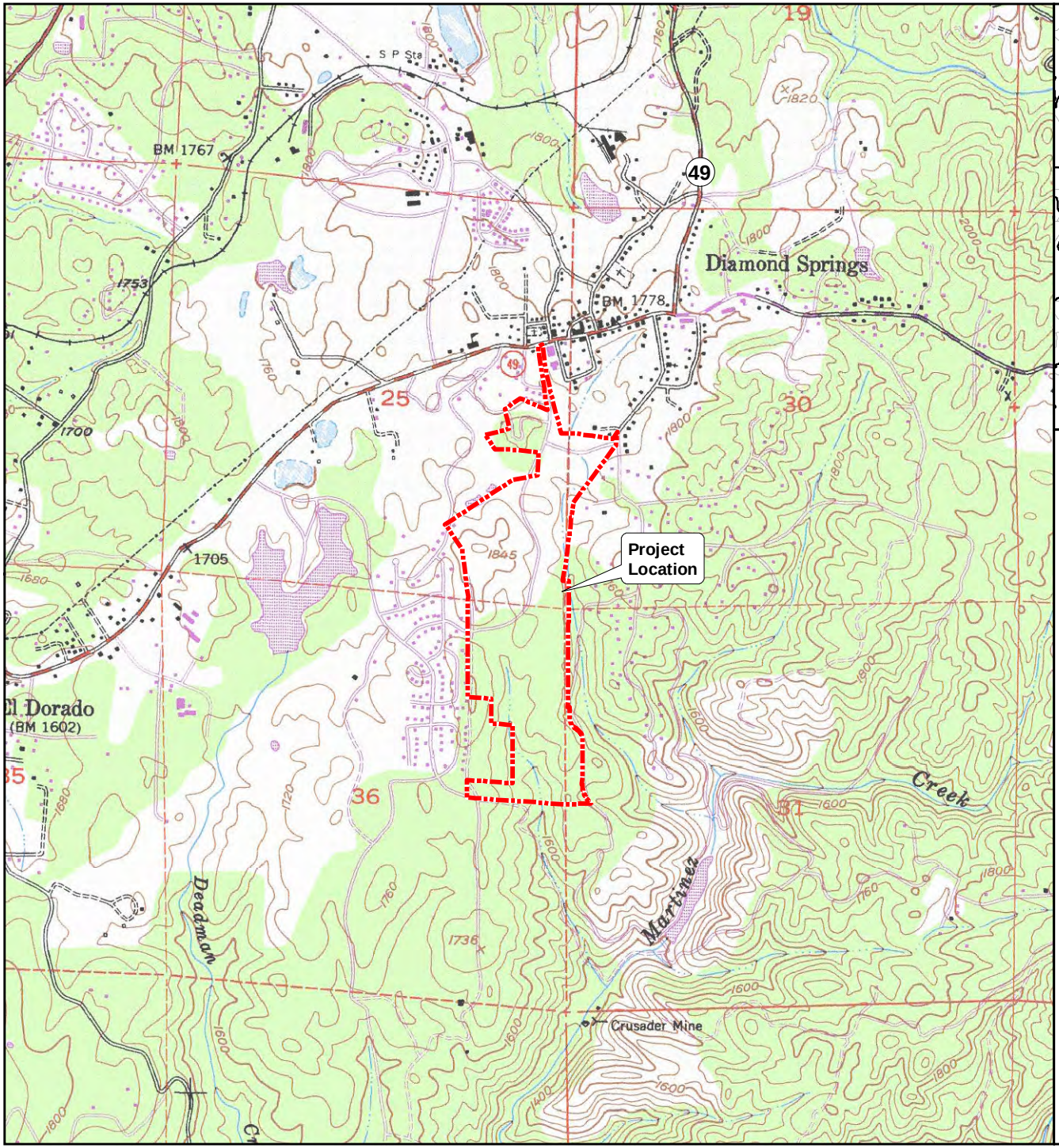
Stonehenge Springs, LLC
2700 South Azusa Avenue
West Covina, CA 91792

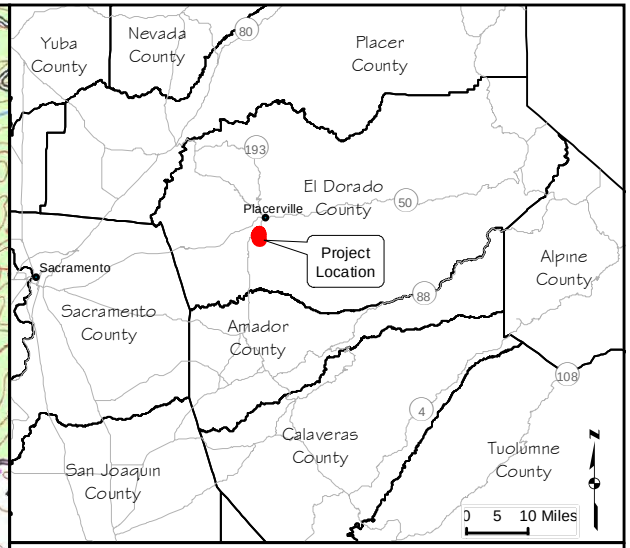
Contact: Mr. Kevin Sweeney
Phone: 530/ 893-1515

D. Project Description

The project intends to design a residential subdivision at the site. Project design has not been finalized, and this report does not quantify impacts or propose mitigation.

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Stonehenge Springs
El Dorado County, CA
8 May 2018

Figure 1. Project Location Map

Project Location

2,000 1,000 0 2,000 Feet

N

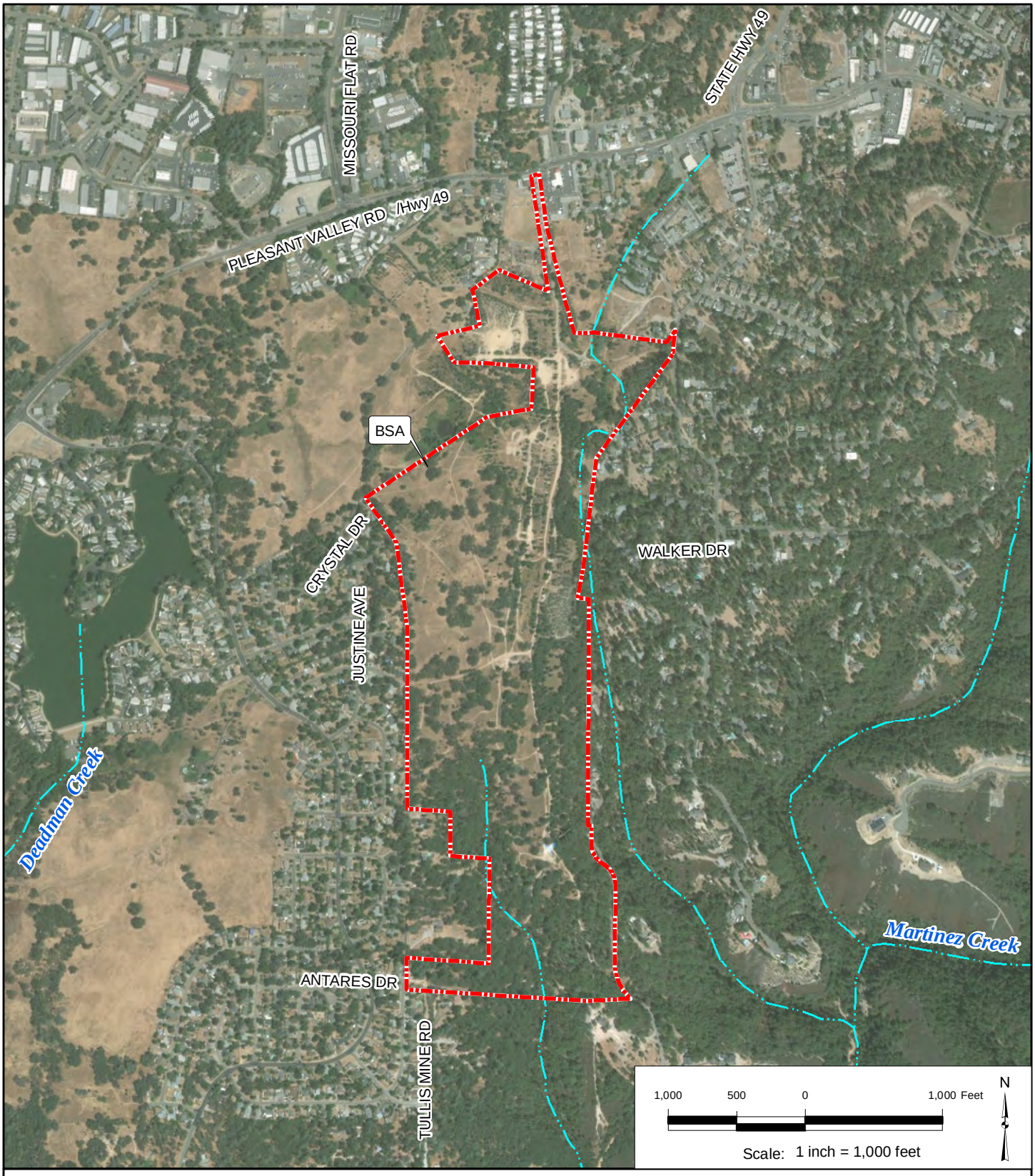
Scale: 1 inch = 2,000 feet

SYCAMORE
Environmental
Consultants, Inc.

Placerville, CA (Revised 1973)
CASIL California USGS Digital Raster Graphics (DRG),
7.5 Minute (C) Series, Albers Nad83 Mosaics (MrSID)
o_nw0101.sid & o_nw0102.sid

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Stonehenge Springs
El Dorado County, CA
8 May 2018

Biological Study Area (BSA)

NHD Flowlines

SYCAMORE Environmental Consultants, Inc.

Aerial Photograph:
7 August 2016/ 3 September 2016
NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

USGS National Hydrography Dataset (NHD) Flowlines

Figure 2. Aerial Photograph

17047StonehengeSprings_BRE_Fig2AerialPhoto(8x11).mxd

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III. STUDY METHODS

A. Studies Conducted

An evaluation of biological resources was conducted to determine whether any special-status plant or wildlife species, their habitat, or sensitive habitats occur in the BSA. Data on known special-status species and habitats in the area was obtained from state and federal agencies. Maps and aerial photographs of the BSA and surrounding area were reviewed. An aquatic resources delineation (Sycamore Environmental 2018), reconnaissance wildlife survey, and appropriately-timed floristic botanical survey were conducted to determine what habitat types were present. The field surveys, map review, and a review of the biology of evaluated species and habitats were used to determine the special-status species and sensitive habitats that could occur in the BSA.

Special-status species in this report are those listed under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by the California Department of Fish and Wildlife (CDFW), that are Ranked 1 or 2 by the California Native Plant Society's Inventory of Rare and Endangered Plants of California (CNPS 2016), or are rare plants listed in the El Dorado County Ordinance Code §130.71.030. Special-status natural communities are waters, wetlands, riparian communities, any natural community ranked S1, S2, or S3 by CDFW (2018), and any community identified as sensitive in the El Dorado County General Plan EIR (2004a).

B. Literature Search

Sycamore Environmental obtained a list from the U.S. Fish and Wildlife Service (USFWS) that identifies federal-listed species that could potentially occur in or be affected by a project in the BSA. The California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory were queried for the Placerville quad and eight surrounding USGS quads to determine known records of special-status species that occur in the vicinity of the BSA. The CNDDB tracks some species that have not been designated by CDFW as a California species of special concern and do not otherwise meet the criteria for special-status species in this BRE. These species are not evaluated in this BRE. The results of the database queries are in Appendix A.

C. Field Survey Methods

1. Survey History, Dates, and Personnel

North Fork Associates (2009) prepared a biological resources assessment for most of the current BSA based on fieldwork conducted between 2006 and 2009. A special-status plant, Nissenan manzanita, was identified in the North Fork Associates report. Both the 2009 findings, and the current findings, are discussed in the context of Nissenan manzanita below in Section V.D.

Fieldwork for this BRE was conducted by Chuck Hughes, M.S., and Nicole Desideri on 13, 14, and 27 June 2017. The site was also visited on four days in August and September during an aquatic resources delineation, which is separately documented (Sycamore Environmental 2018).

2. Precipitation Conditions

Historic average precipitation for the nearby Placerville gauge from 1 July through 31 May is 37.66 inches (CDEC 2018). From 1 July 2016 through 31 May 2017 the Placerville gauge reported 72.13 inches of precipitation. Precipitation for the rain-year at the time of the surveys was about 191% of normal at the nearby Placerville Gauge.

3. Biological Survey

The general biological survey consisted of walking through the BSA while assessing potential habitat for special-status species and sensitive communities. Wildlife species and vegetation communities were identified and recorded. A list of plant and wildlife species observed in the BSA is in Appendix C. Photographs of the BSA are in Appendix D.

4. Botanical Survey

The botanical survey followed the guidelines set forth by USFWS (1996) and CDFW (2009). The botanical survey complies with newer CDFW (2018) guidelines written after the fieldwork was conducted, which are similar to the 2009 guidelines. The June 2017 fieldwork was conducted during the published blooming period of special-status plants with potential to occur in the BSA, with the exception of Nissenan manzanita. Manzanitas generally bloom very early in the season, and the blooming period of Nissenan manzanita is February through March (CNPS 2016). However, Nissenan manzanita is best distinguished form the other manzanita in the BSA by bark characteristics, inflorescence bracts, and to a lesser extent by leaf size. The gray, shredding bark of Nissenan manzanita was clearly distinguishable from the red, smooth bark of the more common manzanita in the BSA (Appendix D, photo 4). The botanical survey was conducted during the evident and identifiable period of Nissenan manzanita.

Systematic transects were walked throughout the BSA to search for all vascular plant species present. Frequent deviations were made from the transects to search areas of different microhabitat, areas that were more likely to support special-status plants, or identify additional plant species. Approximately 36 person-hours were spent in the field during the June 2017 surveys. An additional 8 person-hours were spent keying plants collected in the field. All vascular plants found in the BSA were identified to the taxonomic level necessary to determine legal status. A list of all vascular plants observed in the BSA is in Appendix C. Scientific nomenclature follows the Jepson Flora Project (2018), based on

Baldwin *et al.* (2012). A CNDDB field survey form for Nissenan manzanita was completed and submitted to CDFW (Appendix E).

D. Mapping

An aerial photograph acquired from Google Earth Pro (2016) provided the base layer for Figures 4, 5, and 6. Waters and wetland boundaries were mapped with a sub-meter accurate global positioning system (GPS) and were imported from the aquatic resources delineation (Sycamore Environmental 2018). Aerial photographs and field notes were used to estimate the boundaries of upland biological communities. Areas mapped as oak woodlands have a minimum of 10% cover of oak tree canopy, consistent with the new County Oak Resources Management Plan (ORMP) adopted in 2017. Acreages were calculated using ArcMap functions.

E. Problems Encountered and Limitations That May Influence Results

This BRE is intended to identify baseline biological resources to support review of a project under the California Environmental Quality Act (CEQA). The surveys conducted for this BRE are not intended to meet the documentation requirements of any published agency protocol or guideline surveys for special-status wildlife. A survey according to agency protocol for plants was conducted. No other problems or limitations were encountered during the fieldwork that would influence the results.

IV. ENVIRONMENTAL SETTING

The BSA is in the community of Diamond Springs in the Sierra Nevada Mountains. The elevation ranges from approximately 1,620 to 1,840 feet. Most of the BSA is characterized by oak woodland, with ponderosa pine common in some areas. A substantial area (roughly 25 acres) in the northern portion of the BSA was graded prior to 1993. There are two intermittent channels and several ephemeral tributaries. The area surrounding the BSA consists of areas developed to residential and commercial uses, and undeveloped land with similar vegetation.

A. Soils

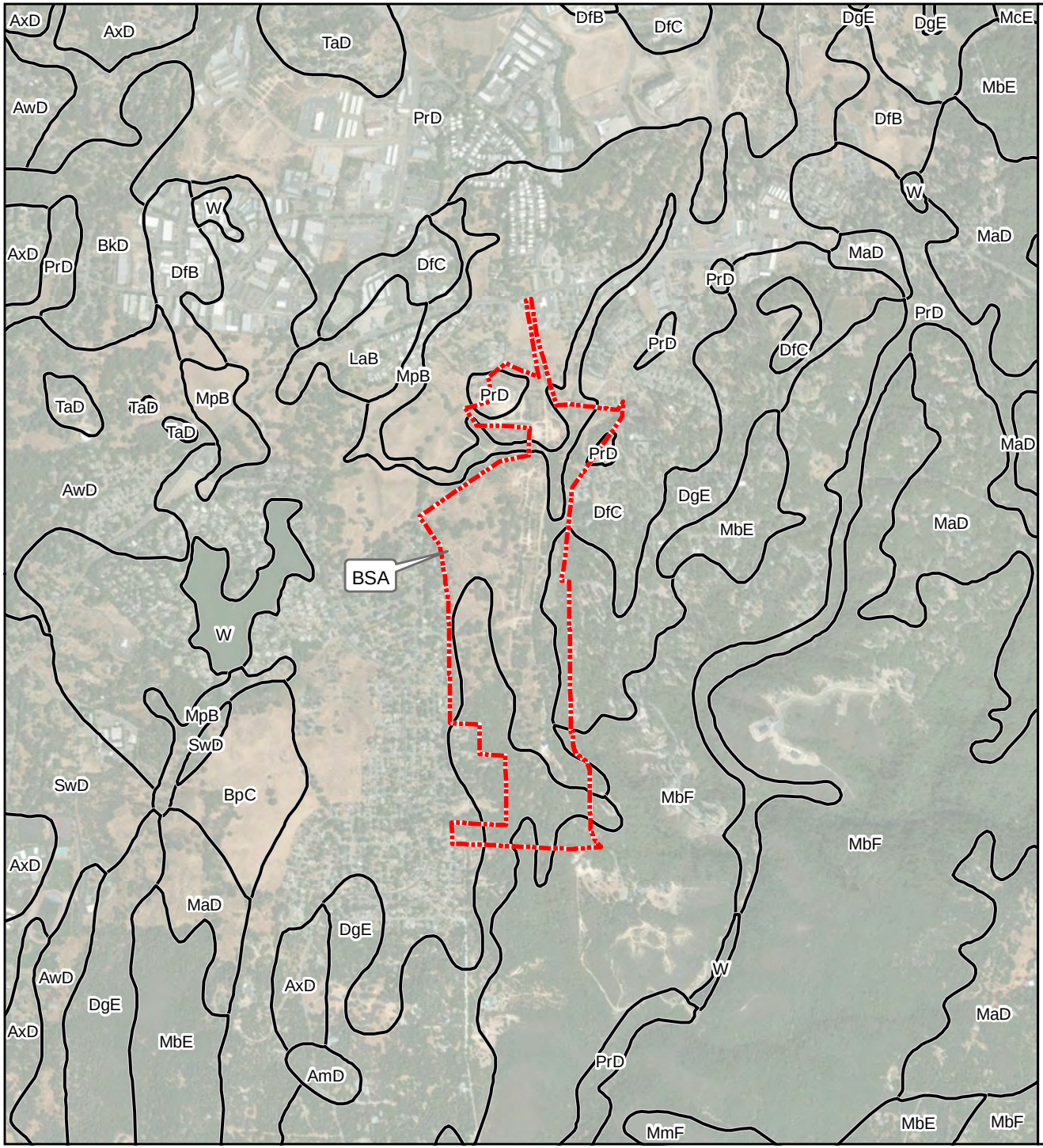
The primary component soils of mapping units in the BSA (Figure 3) are summarized below (NRCS 1974, USDA-NRCS 2017a, b). Reported colors are for moist soil.

Diamond Springs very fine sandy loam, 9–15% slopes;
Diamond Springs very rocky very fine sandy loam, 3–50% slopes:
The Diamond Springs series consists of well-drained soils underlain by fine-grained acidic igneous rocks at a depth of 24 to 50 inches. A typical profile has dark brown (10YR 4/3) very fine sandy loam from 0 to 3 inches, yellowish brown (10YR 5/4) loam from 3 to 9 inches, yellowish brown (10YR 5/4) light clay loam from 9 to 14 inches, light yellowish brown (10YR 6/4) clay loam from 14 to 28 inches, very pale brown (10YR 7/4) clay loam from 28 to 36 inches, and very pale brown (10YR 7/4) coarse sandy clay loam that has brownish-yellow (10YR 6/6) mineral grains from 36 to 40 inches. In Diamond Springs very rocky very fine sandy loam approximately 5–25 percent of the surface is rock outcrops. Surface runoff is medium to rapid, and the erosion hazard is slight to high. The soil profile has moderate to very strong acidity in the top 12 inches.

Mariposa very rocky silt loam, 50–70% slopes:
The Mariposa series consists of well-drained soils that are underlain by vertically tilted schists and slate and contact metamorphic rock. A typical profile has reddish brown (5YR 4/4) gravelly silt loam from 0 to 8 inches, yellowish red (5YR 4/6) gravelly silt loam from 8 to 15 inches, yellowish red (5YR 4/6) gravelly heavy silt loam from 15 to 26 inches, and yellowish brown weathered slate or schist below 26 inches. Surface runoff is rapid and erosion hazard is high. The soil profile has moderate acidity in the top 12 inches.

Mixed alluvial land:
Mixed alluvial land consists of small areas of recent mixed alluvium adjacent to stream channels. It is derived from volcanic and sedimentary rock. The color of this soil is variable. Mixed alluvial land is stratified gravelly sandy loam, gravelly loam, and gravelly clay loam that grades into sand and gravel as depth increases. Underlying bedrock is found 36 to 40 inches deep. This land type is poorly to moderately well drained, and permeability is moderately rapid to slow. Surface runoff is slow to medium, and the erosion hazard is moderate. This land is subject to frequent flooding in the winter (NRCS 1974; USDA-NRCS 2017a).

Placer diggings:
Placer diggings consists of areas of stony, cobbly and gravelly material. It is commonly found in beds of creeks and other streams on 2 to 15 percent slopes, or of areas that have been placer mined and contain enough fine sand or silt to support some grass for grazing. This material is derived from a mixture of rocks and commonly is stratified or poorly sorted. The depth is variable, from 6 inches to more than 5 feet deep. Areas in streambeds occasionally are flooded during the rainy season. Surface runoff is low and available water storage is very low (NRCS 1974; 2017b).



Stonehenge Springs
El Dorado County, CA
8 May 2018

Figure 3. Soils Map

Biological Study Area (BSA)

Soil Boundary

Soil Mapping Unit

Symbol	Name
DfC	Diamond Springs very fine sandy loam, 9 to 15 percent slopes
DgE:	Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes
MbF	Mariposa very rocky silt loam, 50 to 70 percent slopes
MpB	Mixed alluvial land
PrD	Placer diggings

1,667 0 1,667 Feet

N

Scale: 1 inch = 1,667 feet

SYCAMORE Environmental Consultants, Inc.

Soil Survey Geographic (SSURGO) database for El Dorado Area, California, USDA, NRCS
URL:http://SoilDataMart.nrcs.usda.gov/

Aerial Photo: 13 July 2014
NAIP2014 USDA FSA Imagery
ArcGIS Imagery Basemap layer

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Stonehenge Springs
El Dorado County, CA
8 May 2018

250 125 0 250 Feet

Scale: 1 inch = 250 feet

N

Biological Study Area (BSA)

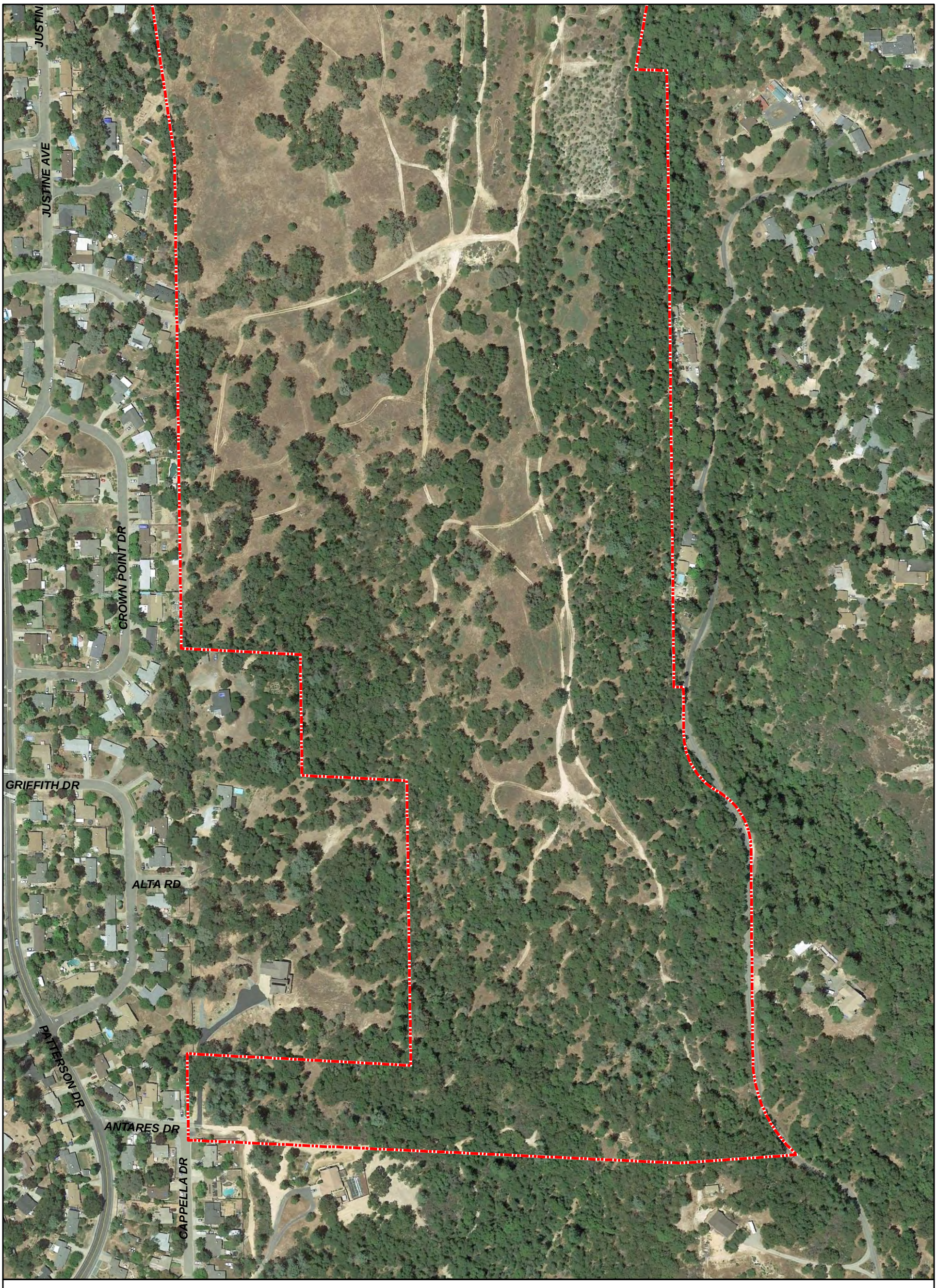
SYCAMORE Environmental Consultants, Inc.

Figure 4.
Aerial Photograph
Sheet 1 of 2, (North)

Aerial Photograph: 28 June 2017
Google Earth Aerial Imagery

17047StonehengeSprings_Fig4AerialPhoto(11x17)_v2.mxd

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Stonehenge Springs
El Dorado County, CA
8 May 2018

250 125 0 250 Feet

Scale: 1 inch = 250 feet

N

Biological Study Area (BSA)

SYCAMORE Environmental Consultants, Inc.

Figure 4.
Aerial Photograph
Sheet 2 of 2, (South)

Aerial Photograph: 28 June 2017
Google Earth Aerial Imagery

17047StonehengeSprings_Fig4AerialPhoto(11x17)_v2.mxd

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B. Biological Communities

Biological communities are defined by species composition and relative abundance. The biological communities described below correlate where applicable with the California Natural Community List (CDFW 2018) and the El Dorado County General Plan EIR (2004a). The communities were identified based on Sawyer *et al.* (2009). Communities are identified at the alliance level. The list of sensitive associations within each alliance was checked to see if any occur (CDFW 2018). Biological communities are mapped on Figure 5 and listed in Table 1. Representative photographs of the BSA are in Appendix D.

Table 1. Biological Communities.

Biological Community Common Name (Scientific Name [CDFW Code][1])	**El Dorado County Major Habitat Type [2]**	**Area (ac)**
California Black Oak Woodland (*Quercus kelloggii* [71.010.00])	Montane Hardwood	33.30
California Annual Grassland (*Avena spp. – Bromus spp.* [42.027.00])	Annual Grassland	31.12
Young Ponderosa Pine Woodland – Disturbed (*Pinus ponderosa* [87.010.00])	--	28.71
Valley Oak – Interior Live Oak Woodland (*Quercus lobata – Quercus wislizeni* [71.040.12])	Valley Oak Woodland	19.91
Valley Oak Woodland (*Quercus lobata* [71.040.00])	Valley Oak Woodland	13.14
Ponderosa Pine – Interior Live Oak Woodland (*Quercus wislizeni – Pinus ponderosa* [71.080.15])	Montane Hardwood-Conifer	8.64
Canyon Live Oak Woodland (*Quercus chrysolepis* [71.050.00])	Montane Hardwood	4.28
Sandbar Willow Scrub (*Salix exigua* [61.209.01])	Valley Foothill Riparian	0.58
Wetlands	--	1.12
Channels	--	0.98
Seasonal Pond	--	0.38
Roads	Urban	1.68
	Total:	**143.83**

[1] Sawyer *et al.* 2009, CDFW 2018

[2] El Dorado County 2004a

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PLEASANT VALLEY RD
SILVER DR
HOWARD CIR
DIAMOND MEADOWS WAY
SUNRISE DR
TULLIS MINE RD
CRYSTAL DR
JUSTINE AVE
WALKER DR
Road - Faith Lane
VO-ILOW
SWS
YPW-DIS
CAG
PP-ILOW
VOW
Channel 1
CLO

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Color	Acronym	Biological Communities	Acreage
	CBO	California Black Oak Woodland (CBO)	33.30
	CAG	California Annual Grassland (CAG)	31.12
	YPW-DIS	Young Ponderosa Pine Woodland - Disturbed (YPW-DIS)	28.71
	VO-ILOW	Valley Oak - Interior Live Oak Woodland (VO-ILOW)	19.91
	VOW	Valley Oak Woodland (VOW)	13.14
	PP-ILOW	Ponderosa Pine - Interior Live Oak Woodland (PP-ILOW)	8.64
	CLO	Canyon Live Oak Woodland (CLO)	4.28
	SWS	Sandbar Willow Scrub (SWS)	0.58
	--	Roads	1.68
		Aquatic Resources	
	--	Wetlands	1.12
	--	Channels	0.98
	--	Seasonal Pond	0.38
		Total	**143.83**

Project Study Area (PSA)
Biological Community Boundary

250 125 0 250 Feet
Scale: 1 inch = 250 feet
N

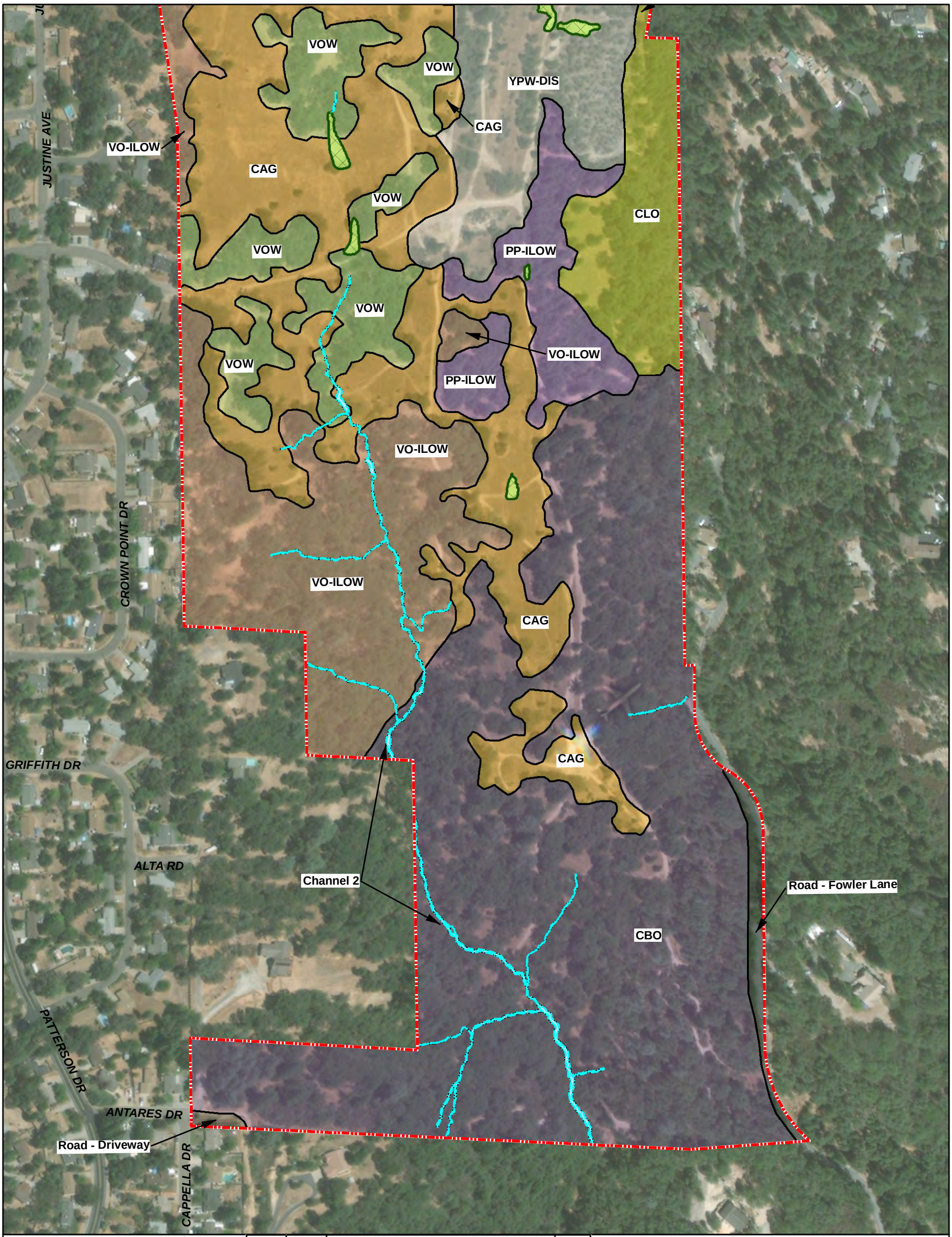
SYCAMORE Environmental Consultants, Inc.

Aerial Photograph: 7 August 2016/ 3 September 2016
NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

Figure 5.
Biological Resources Map
Sheet 1 of 2, (North)

17047StonehengeSprings_Fig5BioresMap(11x17)_v3.mxd

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Color	Acronym	Biological Communities	Acreage
	CBO	California Black Oak Woodland (CBO)	33.30
	CAG	California Annual Grassland (CAG)	31.12
	YPW-DIS	Young Ponderosa Pine Woodland - Disturbed (YPW-DIS)	28.71
	VO-ILOW	Valley Oak - Interior Live Oak Woodland (VO-ILOW)	19.91
	VOW	Valley Oak Woodland (VOW)	13.14
	PP-ILOW	Ponderosa Pine - Interior Live Oak Woodland (PP-ILOW)	8.64
	CLO	Canyon Live Oak Woodland (CLO)	4.28
	SWS	Sandbar Willow Scrub (SWS)	0.58
	--	Roads	1.68
		Aquatic Resources	
	--	Wetlands	1.12
	--	Channels	0.98
	--	Seasonal Pond	0.38
		Total	**143.83**

Stonehenge Springs
El Dorado County, CA
8 May 2018

Figure 5.
Biological Resources Map
Sheet 2 of 2, (South)

Project Study Area (PSA)

Biological Community Boundary

250 125 0 250 Feet

Scale: 1 inch = 250 feet

N

SYCAMORE Environmental Consultants, Inc.

Aerial Photograph: 7 August 2016/ 3 September 2016
NAIP2016 USDA FSA Imagery
ESRI ArcGIS Basemap Layer

17047StonehengeSprings_Fig5BioresMap(11x17)_v3.mxd

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1. California Black Oak Woodland

California black oaks (*Quercus kelloggii*) are dominant in the woodland at the south end of the BSA. Other common trees in this community include interior live oak (*Q. wislizeni*), valley oak (*Q. lobata*), and foothill pine (*Pinus sabiniana*). The canopy is mostly closed, although some small open patches occur. The understory shrub layer is patchy, and where present is dominated by poison oak (*Toxicodendron diversilobum*), and chamise (*Adenostoma fasciculatum*) in more open areas. The herb layer is dominated by native and nonnative grasses, and mostly native forbs.

2. California Annual Grassland

California annual grassland is an upland, herbaceous community dominated by nonnative grasses including wild oat (*Avena* sp.), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and medusa-head (*Elymus caput-medusae*). Trees and shrubs are sparse and widely spaced.

3. Young Ponderosa Pine Woodland – Disturbed

This community encompasses most of an area that was graded for development prior to 1993. Since that time substantial woody vegetation has grown back in much of the area, although some of the area remains mostly unvegetated. Tree cover is dominated by ponderosa pine (*Pinus ponderosa*), with interior live oak in lesser abundance. Nearly all of the trees are young and have grown back since the grading. Shrubs are sporadic and consist mostly of coyote brush (*Baccharis pilularis*) and manzanita (*Arctostaphylos viscida* ssp. *viscida*). Herbs consist mostly of nonnative grasses and forbs similar to the California annual grassland, with patches of rye grass (*Festuca perennis*) present in some areas.

4. Valley Oak – Interior Live Oak Woodland

This community is dominated by valley oak and interior live oak. In the BSA the canopy is mostly closed, although some open areas of with low vegetation similar to the California annual grassland occur. The shrub layer is patchy, and where present is dominated by poison oak. Other common shrubs include buckbrush (*Ceanothus cuneatus*), California coffee berry (*Frangula californica* ssp. *tomentella*), and hollyleaf redberry (*Rhamnus ilicifolia*).

5. Valley Oak Woodland

This community is dominated almost entirely by valley oak trees. In most places the trees are well spaced and are large. The canopy is partially open. Shrubs are relatively sparse in this community and where present are dominated by poison oak. Herbaceous vegetation similar to California annual grassland is present in most areas.

6. Ponderosa Pine – Interior Live Oak Woodland

This community has a nearly closed canopy of ponderosa pine, with interior live oak sub-dominant. Some of this area was graded for development prior to 1993, but has since grown back with thick woody vegetation. The shrub layer is patchy and dominated by poison oak where present. Much of this community has deep shade at ground level and the herbaceous layer is sparse. Some more open areas have herbaceous vegetation similar to California annual grassland, with more Baltic rush (*Juncus balticus*) present.

7. Canyon Live Oak Woodland

This community has a nearly closed canopy dominated by canyon live oak (*Quercus chrysolepis*). Interior live oak is also common. The shrub layer is patchy and generally sparse. Where present it is dominated by poison oak. Much of this community has deep shade at ground level and the herbaceous layer is sparse.

8. Sandbar Willow Scrub

This upland community is along two small drainages in the northern end of the BSA. It is dominated by sandbar willow (*Salix exigua*) and the nonnative invasive Himalayan blackberry (*Rubus armeniacus*). The herb layer is mostly absent, and where present is dominated by nonnative annual grasses.

9. Wetlands

Wetlands in the BSA have seasonal hydrology and are dominated by hydrophytic vegetation capable of withstanding the summer dry season. Vegetation is herbaceous and dominated by Baltic rush, whiteroot sedge (*Carex barbarae*), spikerush (*Eleocharis macrostachya*), annual hair grass (*Deschampsia danthonoides*), loosestrife (*Lythrum portula),* rye grass (*Festuca perennis*), and annual beard grass (*Polypogon monspeliensis*). Many wetlands occur in low spots in previously graded areas or dirt roads. These wetlands have substantial cover of bare soil. Wetlands are further described in the aquatic resources delineation report (Sycamore Environmental 6 February 2018).

10. Channels

Most of the channels in the BSA are ephemeral and flow only for brief periods of up to a few days after storm events. The ephemeral channel beds consist mostly of scoured soil and there is no riparian vegetation community or aquatic wildlife.

The lower reaches of Channels 1 and 2 are small intermittent channels. They have a groundwater component to flow and contain water into the spring and summer, although they are dry throughout most of the summer and autumn. Scattered riparian vegetation is present in the streambeds or along the immediate streambanks. Many areas of the intermittent streams in the BSA are dominated by nonnative invasive Himalayan blackberry. The intermittent streams in the BSA are too small to support fish or most aquatic wildlife,

although they may be a seasonal water source for upland wildlife. Channels are further described in the aquatic resources delineation report (Sycamore Environmental 6 February 2018).

11. Seasonal Pond

A seasonal pond is partially in, but mostly outside of, the BSA. Surface water accumulates in the pond up to a depth of several feet. On 13 September 2017, part of the pond off-site still had approximately 1 foot of water. Sycamore Environmental also observed remaining water in the deepest off-site parts of the pond on 12 September and 10 December 2006 for an adjacent project. Based on review of aerial photographs the pond may completely dry out in dry years, but retain some standing water in the deepest parts in wet years (Google, Inc. 2017). The pond is the result of an off-site impoundment of a wetland swale.

Some deeper parts of the pond are vegetated with aquatic emergent vegetation such as spikerush. Some pond margins in the BSA are thickly vegetated with willows and Himalayan blackberry. The pond supports some aquatic wildlife such as bullfrogs. The pond is further described in the aquatic resources delineation report (Sycamore Environmental 6 February 2018).

12. Roads

This area includes mostly paved roads including Faith Lane and Fowler Lane, and includes the disturbed road shoulders.

C. The Existing Level of Disturbance

Much of the northern half of the site, the area mapped as young ponderosa pine woodland – disturbed, was graded for development prior to 1993. Many young ponderosa pines have grown back. Substantial bare areas and dirt roads that experience ongoing disturbance from off-road vehicles remain. The soil has been significant disturbed, and in some places scraped down to bedrock. There is also a sewer utility facility of about 0.04 acre in this area.

Many dirt roads occur throughout the BSA. There is also substantial disturbance from homeless camps. Most of the Channel 1 corridor has been heavily invaded by Himalayan blackberry, a perennial vine with severe ecological impacts (Cal-IPC 2016). Overall, the level of disturbance is greater in the norther half of the BSA than the south.

V. BIOLOGICAL RESOURCES IN THE STUDY AREA

A. Determination of Special-Status Species in the Study Area

USFWS file data, CNDDB/CNPS records, and field surveys were used to determine the special-status species that could occur in the BSA (Appendix A). A field survey was conducted to determine whether habitat for special-status species identified in the file data is present in the BSA. Special-status species for which suitable habitat is present in the BSA are listed in Table 2.

Table 2. Special-Status Species and Natural Communities.

Special-Status Species	Common Name	Federal Status [a]	State Status [a] & other codes [b]	Source [c]	Habitat Present? / Species Observed?
Reptiles					
Emys marmorata	Western pond turtle	--	SSC	2	Yes/No
Phrynosoma blainvillii	Coast (CA) horned lizard	--	SSC	2	Yes/No
Birds					
Nesting Birds (MBTA or CA regulated)		--	--	3	Yes/Yes
Plants			**/ CNPS List** [b]		
Arctostaphylos nissenana	Nissenan manzanita	--	--/1B.2	2, 3	Yes/Yes
Carex cyrtostachya	Sierra arching sedge	--	--/1B.2	2	Yes/No
Horkelia parryi	Parry's horkelia	--	--/1B.2	2	Yes/No
Viburnum ellipticum	Oval-leaved viburnum	--	--/2B.3	2	Yes/No
Natural Communities					
Oak Woodlands and Trees		--	--	3	Yes/Yes
Waters and Wetlands (Including Sacramento-San Joaquin foothill/valley ephemeral stream)		--	--	3	Yes/Yes
Sandbar Willow Scrub		--	--	3	Yes/Yes

[a] **Listing Status:** Federal status determined from USFWS letter. State status determined from CDFW (2016a, b, c, d). Codes used in table are: **E** = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare; ***** = Possibly extinct.

[b] **Other Codes:** Other codes determined from USFWS letter; CDFW (2016a, b, c, and d). Codes used in table are as follows:
SSC = CDFW Species of Special Concern; **FP** = CDFW Fully Protected; **Prot** = CDFW Protected; **CH =** Critical habitat designated.

CNPS List (plants only): **1A** = Presumed Extinct in CA; **1B** = Rare or Endangered (R/E) in CA and elsewhere; **2** = R/E in CA and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution

CNPS List Decimal Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); **.2** = Fairly endangered in CA (20-80% of occurrences threatened); **.3 =** Not very endangered in CA (< 20% of occurrences threatened or no current threats known).

[c] **Source:** **1** = USFWS letter. **2** = CNDDB. **3 =** Observed or included by Sycamore Environmental.

B. Special-Status Species not in the Project Study Area

Special-status species for which suitable habitat is not present, or whose distributional limits preclude the possibility of their occurrence in the BSA, are not discussed in Section V of this report. An evaluation of these species is in Appendix B.

C. Evaluation of Special-Status Wildlife Species

1. Reptiles

Western Pond Turtle (WPT; *Emys marmorata*)

HABITAT AND BIOLOGY: WPT are a CDFW species of special concern (CDFW 2016c). WPT prefer aquatic habitats with abundant vegetative cover and exposed basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. WPT are associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams (CWHR 2016). This species will also temporarily use semi-permanent or ephemeral water bodies, including stock ponds, vernal pools, and seasonal wetlands (Thomson *et al.* 2016). They are omnivorous generalists and opportunistic predators that prey upon small insects, aquatic invertebrates, fish, frogs, snakes, and small mammals. They also eat aquatic plant material and carrion (Stebbins 2003).

Two distinct habitats may be used for oviposition. Along large slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes traveling over 330 feet to find a suitable nest site. Upland nesting habitat must have soils that are loose enough for nest excavation, with infrequent or low intensity disturbance so that nests are not disturbed (Thomson *et al.* 2016). Soil must usually be at least 4 inches deep for nesting. WPT lay 3 to 11 eggs from March to August depending on local conditions. The eggs incubate for approximately 73 to 80 days (CWHR 2016).

RANGE: WPT occur throughout northern California west of the Sierra Nevada (Stebbins 2003) from sea level to about 4,700 feet (CWHR 2016).

KNOWN RECORDS: There are 7 CNDDB records in the 9-quad area centered on the BSA. The nearest record is approximately two miles northeast of the BSA in habitat described as a freshwater pond, dominated by cattails; surrounded by willows, blackberry vines, rushes, native grasses, and toyon. Three adults and 2 juveniles were observed on 16 May 2001 through 2002.

HABITAT PRESENT IN THE BSA: The pond in the BSA provides marginal potential habitat for WPT. The pond has large seasonal variations in water level and may dry out completely in some years based on aerial photographs. Even in wet years, the pond dries down to about a foot of remaining water. WPT could occur in the pond seasonally. WPT may not be able survive at the pond year-round. The pond is not along a channel or ditch that provides connectivity to other WPT habitat. The pond is marginal WPT habitat due to its seasonal nature and poor connectivity. The channels in the BSA are too small to provide habitat for WPT.

DISCUSSION: WPT was not observed in the BSA during the general biological field surveys, but could occur in the pond. Avoiding the pond could avoid impacts to WPT.

Coast (=California) Horned Lizard (*Phrynosoma blainvillii*)

HABITAT AND BIOLOGY: Coast horned lizard is a CDFW species of special concern (CDFW 2016c). They may occur in valley-foothill hardwood, conifer, riparian, pine-cypress, juniper, and annual grassland habitats. Within these habitats, they especially use sandy areas, washes, floodplains, and wind-blown deposits. Coast horned lizards forage on the ground in open areas, usually between shrubs and often near ant nests. Coast horned lizards burrow into loose soil to avoid extreme heat and predators. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices (CWHR 2015).

Coast horned lizard tends not to persist where the argentine ant invades (Suarez *et al.* 2000, Suarez and Case 2002). All four records of coast horned lizard in El Dorado County are in areas of chaparral. Areas of chaparral are generally dominated in both the herb and shrub layers by native plants that co-occur with native ant populations. Coast horned lizards eat native ants.

The reproductive season for coast horned lizard varies from year to year and geographically depending on local conditions. Egg-laying in southern California has been reported from late May through June (CWHR 2015).

RANGE: Coast horned lizards occur in the Sierra Nevada foothills from Butte county to Kern county and throughout the central and southern California coast. The elevation range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of southern California, though they are primarily found below 2,000 feet in the north and 3,000 feet in the south (CWHR 2015). Coast horned lizards have a spotty distribution from Shasta Lake southward along the edges of the Sacramento Valley into much of the south Coast Ranges, San Joaquin valley, and Sierra Nevada foothills to northern Los Angeles, Santa Barbara and Ventura counties (Jennings and Hayes 1994).

KNOWN RECORDS: There are four CNDDB records in the 9-quad area centered on the BSA. The nearest record is approximately 7.6 miles west of the BSA in habitat described as northern gabbroic mixed chaparral on rescue series soils. Two individuals were observed in April 2005.

HABITAT PRESENT IN THE BSA: The BSA provides marginal potential habitat for coast horned lizard. Coast horned lizards are more likely to occur in areas of dense native shrubs, which are patchy throughout the BSA, including some areas under tree canopy.

DISCUSSION: Coast horned lizard was not observed during the general biological surveys in 2008 or 2017. Coast horned lizards are camouflaged well and are not easily seen. The BSA provides potential habitat for coast horned lizard, but the habitat is not unique or regionally scarce.

2. Birds

Nesting Birds Listed Under the MBTA or Regulated by CA Fish and Game Code

California Fish and Game Code §3503 protects most birds and their nests. CA Fish and Game Code §3503.5 further protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) also protects most birds and their nests, including most non-migratory birds in California. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law.

HABITAT PRESENT IN THE BSA: The BSA provides potential nesting habitat for birds listed under the MBTA or regulated by California Fish and Game Code. Depending on the species, birds may nest on trees, shrubs, in or on the ground, and on artificial structures such as buildings, poles, and signs.

DISCUSSION: Bird species observed in the BSA are identified in Appendix C. Active nests could become established prior to construction. The nesting season is typically considered to be 15 February to 31 August for most bird species. Avoidance of vegetation removal during that time period, and surveys and avoidance of nests during that time period, could minimize impacts to nesting birds.

D. Evaluation of Special-Status Plants

Nissenan Manzanita (*Arctostaphylos nissenana*)

HABITAT AND BIOLOGY: Nissenan manzanita is an evergreen shrub found on rocky soil and ridges in closed-cone coniferous forest or chaparral habitats from about 1,475 to 5,400 feet. It typically blooms from February through March (CNPS 2016, Jepson 2018).

RANGE: Nissenan manzanita is known from three counties (Placer, El Dorado, and Tuolumne) in the northern Sierra Nevada Mountains and central Sierra Nevada foothills (CNPS 2016, Jepson 2018).

KNOWN RECORDS: There are 15 CNDDB records in the 9-quad area centered at the BSA. North Fork Associates prepared a Biological Resources Assessment, including a botanical survey, for most of the current BSA in 2009. North Fork reported 62 Nissenan manzanita plants from the site. Sycamore Environmental visited the site briefly in 2013, made a collection of Nissenan manzanita that was deposited at the UC Davis herbarium, and became CNDDB Occurrence 14 in the BSA. CNDDB Occurrence 1 is much larger and is near the BSA to the east and south.

HABITAT PRESENT IN THE BSA: The BSA provides habitat for Nissenan manzanita. A total of 88 Nissenan manzanita shrubs were counted in the BSA during the botanical survey in 2017 (Figure 6). A CNDDB report is in Appendix E. The locations of the shrubs are very similar to the locations observed by North Fork in 2009.

DISCUSSION: Nearly all of the Nissenan manzanita in the BSA is growing in the areas that were graded for development prior to 1993. Nissenan manzanita seeds likely germinated after the disturbance. Nissenan manzanita that are not avoided by work in the BSA could be propagated to reduce impacts. Propagation by seed is the mostly likely method for this species. Nissenan manzanita in the BSA is not a good candidate for transplantation because it is growing in rocky areas where excavation without severe root damage is unlikely.

Sierra Arching Sedge (*Carex cyrtostachya*)

HABITAT AND BIOLOGY: Sierra arching sedge is a perennial herb found in wet meadows, marshes, seasonally wet outcrops, seeps, swales, riparian margins, and floodplain terraces from about 2,000 to 4,500 feet in elevation. It blooms May through August (CNPS 2016, Jepson 2018).

RANGE: Sierra arching sedge is known from three counties (Butte, El Dorado, and Yuba) in the northern Sierra Nevada Mountains (CNPS 2016, Jepson 2018).

KNOWN RECORDS: There is one CNDDB record in the 9-quad area centered on the BSA. The record occurs approximately 12.3 miles north of the BSA in habitat described as a narrow Creekside strip of riparian woodland through open serpentine chaparral dominated by *Quercus durata* with scattered gray pine, *Fraxinus, Acer macrophyllum, Alnus rhombifolia, Aster oregonensis* and *Artemisia*. Over 30 clumps were observed in 2007.

HABITAT PRESENT IN THE BSA: The margins of seasonally wet areas in the BSA, including the pond and Channel 1, may provide potential habitat for Sierra arching sedge.

DISCUSSION: Sierra arching sedge was not observed in the BSA during the botanical surveys in 2008 and 2017.

PLEASANT VALLEY RD
SILVER DR
HOWARD CIR
DIAMOND MEADOWS WAY
SUNRISE DR
TULLIS MINE RD
CRYSTAL DR
JUSTINE AVE
WALKER DR
MATCHLINE
3
6
9
3
2

Stonehenge Springs
El Dorado County, CA
8 May 2018

Biological Study Area (BSA)
Single Manzanita Shrubs
Multiple Manzanita Shrubs (number of shrubs)

250 125 0 250 Feet
Scale: 1 inch = 250 feet
N

Figure 6.
Nissenan Manzanita (*Arctostaphylos nissenana*)
Shrub Location Map
Sheet 1 of 2, (North)

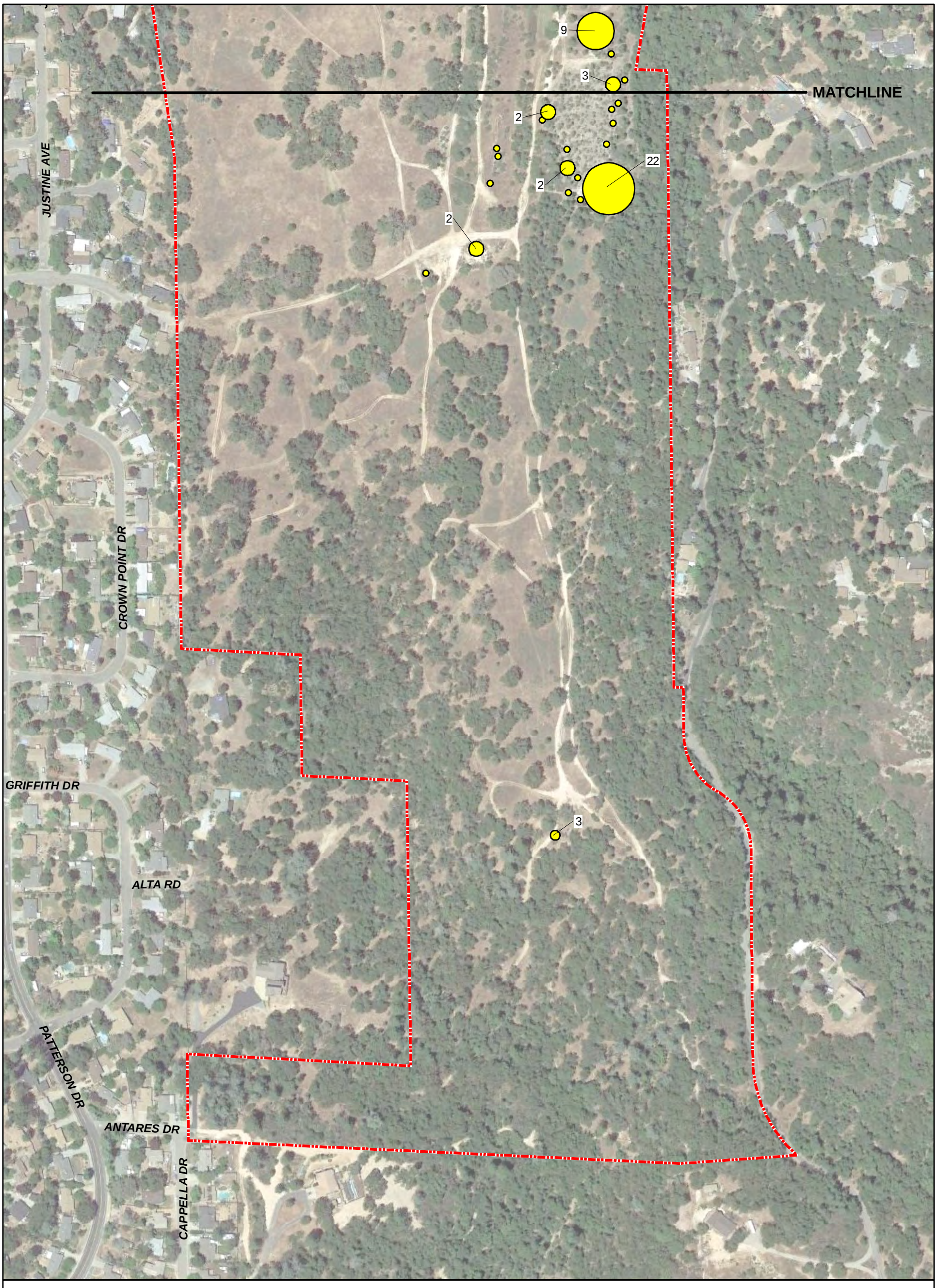
Total Manzanita Count: 88 Shrubs

SYCAMORE Environmental Consultants, Inc.

Aerial Photograph: 28 June 2017
Google Earth Aerial Imagery

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Stonehenge Springs
El Dorado County, CA
8 May 2018

Biological Study Area (BSA)

Single Manzanita Shrubs

Multiple Manzanita Shrubs (number of shrubs)

250 125 0 250 Feet

N

Scale: 1 inch = 250 feet

SYCAMORE Environmental Consultants, Inc.

Aerial Photograph: 28 June 2017
Google Earth Aerial Imagery

Figure 6.
Nissenan Manzanita (*Arctostaphylos nissenana*)
Shrub Location Map
Sheet 2 of 2, (South)

Total Manzanita Count: 88 Shrubs

17047StonehengeSprings_Fig6BotresMap(11x17)_v3.mxd

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Parry's Horkelia (*Horkelia parryi*)

HABITAT AND BIOLOGY: Parry's horkelia is a perennial herb found in chaparral and cismontane woodland, especially of the Ione formation, from about 250 to 3,400 feet in elevation. It blooms April through June (CNPS 2016, Jepson 2018).

RANGE: Parry's horkelia is known from the northern and central Sierra Nevada foothills (CNPS 2016, Jepson 2018).

KNOWN RECORDS: There are 13 CNDDB records in the 9-quad area centered on the BSA. The nearest record occurs approximately 2 miles northeast of the BSA. The record is a 1923 collection, with the exact location unknown and mapped as best guess in the vicinity of Placerville. The nearest detailed record occurs 10.5 miles northeast of the BSA in habitat described as along an abandoned OHV trail among thick shrubs, California black oak, Douglas fir, whiteleaf manzanita, and Nissenan manzanita. A total of 150 plants were observed in 2015, following a burn in the King Fire in 2014.

HABITAT PRESENT IN THE BSA: The upland areas of the BSA may provide potential habitat for Parry's horkelia.

DISCUSSION: Parry's horkelia was not observed in the BSA during the botanical surveys in 2008 and 2017.

Oval-leaved Viburnum (*Viburnum ellipticum*)

HABITAT AND BIOLOGY: Oval-leaved viburnum is a deciduous shrub found in chaparral, cismontane woodland, and lower montane coniferous forest from 700 to 4,600 feet (CNPS 2016). Jepson (2018) describes it as occurring above 980 feet in chaparral or yellow-pine forest, generally on north facing slopes. It blooms May through August (CNPS 2016, Jepson 2018).

RANGE: Known from the north coast, Klamath ranges, north Coast Ranges, Bay Area, and northern/central Sierra Nevada foothills (Jepson 2018).

KNOWN RECORDS: There is one CNDDB record in the 9-quad area centered on the BSA. The record is a 1901 collection mapped approximately 2 miles northeast of the BSA. The exact location of the record is unknown, so it is mapped as best guess in the vicinity of Placerville.

HABITAT PRESENT IN THE BSA: The BSA may provide potential habitat for oval-leaved viburnum.

DISCUSSION: Oval-leaved viburnum was not observed in the BSA during the botanical surveys in 2008 and 2017.

E. Evaluation of Sensitive Natural Communities

Oak Woodlands and Trees

There are about 79.27 acres of oak woodlands in the BSA. Areas mapped as oak woodland have at least 10% canopy cover, consistent with the Oak Resources Management Plan (ORMP) adopted by the County in October 2017. Sparser individual oak trees occur outside of areas mapped as oak woodlands, mostly in the disturbed area of young ponderosa pine woodland. Of the overall oak woodlands in the BSA, about 33.05 acres are valley oak woodland, which is classified as sensitive habitat in the El Dorado County General Plan EIR (2004a) and the ORMP.

DISCUSSION: The ORMP regulates oak woodlands, individual oak trees outside of oak woodlands, and heritage trees. Oak woodlands, areas with at least 10% cover of oak canopy, are regulated by acreage. Individual oak trees outside oak woodlands, of at least six inches dbh, are regulated by size. Heritage oaks, of at least 36 inches dbh, are regulated by size at a higher mitigation ratio, both inside and outside of oak woodlands. Mitigation may occur based on on-site replacement, off-site replacement or preservation, or payment of an in-lieu fee. The oak resources analysis is a stand-alone report that is being prepared separately.

Waters and Wetlands (Including Sacramento-San Joaquin foothill/valley ephemeral stream)

There are about 2.48 acres of channels, wetlands, and a seasonal pond in the BSA. An Aquatic Resources Delineation Report (ARDR) was prepared separately (Sycamore Environmental 2018). The ARDR was prepared to specifications of the U.S. Army Corps of Engineers (Corps).

Portions of Channels 1 and 2 in the BSA are intermittent, meaning groundwater is a source of flow at least seasonally. The other channels are ephemeral, meaning surface runoff is the sole source of flow. The sensitive natural community known as "Sacramento-San Joaquin foothill/valley ephemeral stream" appears on the CNDDB query in Appendix A. CNDDB classifies "ephemeral" streams differently than the Corps. Under the CNDDB classification, ephemeral streams support the larval development of some aquatic invertebrates and amphibians. Under the Corps definition, ephemeral streams flow only for a few hours or days after precipitation events and hence cannot support such larval development. A stream defined by CNDDB as "ephemeral" would be classified as "intermittent" or even "perennial" under the Corps definition. The streams labeled "ephemeral" in the ARDR follow the Corps classification and hence do not meet the criteria of a Sacramento-San Joaquin foothill/valley ephemeral stream. The intermittent streams in the ARDR, portions of Channels 1 and 2, do meet the definition.

DISCUSSION: Fill of waters and wetlands generally requires a permit under Sections 404 and 401 of the federal Clean Water Act. A formal wetland delineation has been prepared for the BSA. The Corps Section 404 permitting process requires mitigation for all waters of the U.S. filled under a "no net loss" policy.

The California Department of Fish and Wildlife (CDFW) regulates intermittent and ephemeral channels under the Streambed Alteration program (§1600 CA Fish and Game Code). CDFW approves mitigation under the Streambed Alteration program on a project-specific basis based upon design impacts.

El Dorado County General Plan Policy 7.3.3.4 and its implementing zoning code (§130.30.030(G)) identify parameters for setbacks from intermittent creeks and wetlands. Ephemeral channels are not included. Part of the purpose of the setbacks is to avoid riparian habitat. The zoning code specifies that discretionary projects shall avoid and minimize impacts "to the maximum extent practicable." The areas in the BSA subject to consideration under the County code are wetlands, the seasonal pond, and the intermittent channels. Intermittent and perennial channels are defined in County zoning code §130.80.020.

The wetlands in the BSA are mostly highly disturbed and result from poor drainage in parts of the area that was previously graded for development, or result from the construction of dirt roads. Only wetland 26 appears to be a naturally-occurring feature. The seasonal wetlands are dry most of the year, have no riparian vegetation outside the wetland, and offer little value for wildlife. No setback is necessary for the seasonal wetlands.

The pond contains water for much of the year, and perhaps the entire year in wet years. Scattered native willows occur along the pond margin, although the margin is largely covered by nonnative invasive Himalayan blackberry. A setback of 25 feet from the pond would retain most of the adjacent riparian vegetation.

Portions of Channels 1 and 2 are small intermittent channels. Native riparian vegetation is scattered or absent along these small channels. Nonnative invasive Himalayan blackberry dominates along much of Channel 1. A setback of 25 feet from the intermittent channels would retain most of the adjacent riparian vegetation.

Sandbar Willow Scrub

The sandbar willow scrub in the BSA is classified as valley foothill riparian, a sensitive habitat in the El Dorado County General Plan EIR (2004a). The sandbar willow scrub did not meet wetland criteria, but does occur in a low area, and part of it is along Channel 1. The sandbar willow scrub is dominated by sandbar willow and nonnative invasive Himalayan blackberry.

DISCUSSION: If the sandbar willow scrub is not avoided by the Project, there may be opportunities for on-site mitigation in open space areas.

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VII. PREPARERS

Chuck Hughes, M.S., Plant Biology, Michigan State University. Over 15 years experience preparing biological/botanical resource evaluations, wetland delineations, arborist reports, impact analyses, and mitigation/restoration plans. He is a Professional Wetland Scientist (#2029), an ISA Certified Arborist (WE-6885A), holds a California Department of Fish and Wildlife Rare, Threatened and Endangered Plant Voucher Collecting Permit (2081(a)-14-072-V), is a Principal Scientific Investigator on the CDFW Scientific Collecting Permit (SC-7617), and is authorized individual on a USFWS recovery permit for listed vernal pool branchiopods (TE799564-4). His bachelor's degree from UC Davis is in environmental horticulture and urban forestry, with an emphasis in plant biodiversity.
Responsibilities: Fieldwork and report preparation.

Nicole Desideri, B.S., Biological Sciences (concentration in Field and Wildlife Biology), California Polytechnic State University. Conducts monitoring, plant and wildlife surveys, and assists with preparation of Biological Resource Evaluations, Natural Environment Study reports, permit applications, and documents used in the CEQA/NEPA process. Serves as both field biologist and technical report writer, and conducts database research on special status species' biology, habitat and distribution. She holds a California Department of Fish and Wildlife Rare, Threatened and Endangered Plant Voucher Collecting Permit (2081(a)-16-107-V) and is an authorized individual on the CDFW Scientific Collecting Permit (SC-7617).
Responsibilities: Fieldwork and report preparation.

Cody Aylward, M.S., Natural Resources (concentration in Wildlife Science), University of Vermont. Conducts biological surveys, assists with preparation of Biological Resource Evaluations, Natural Environment Study reports, Biological Assessments, Sensitive Species Site Assessments, and reports used in the CEQA/NEPA process. He holds a California Department of Fish and Wildlife Rare, Threatened and Endangered Plant Voucher Collecting Permit (#2081(a)-17-102-v) and is an authorized individual on the CDFW Scientific Collecting Permit (SC-7617). He has professional experience using DNA-based wildlife detection techniques. His bachelor's degree from the University of Vermont is in Zoology.
Responsibilities: Report preparation.

Aramis Respall, GIS Analyst/ CAD Operator. Over 20 years experience in drafting and spatial analysis using AutoCAD and ArcGIS. He prepares figures for biological and permitting documents such as project location maps, aerial photographs, biological resource maps, wetlands/waters delineation maps, impact analysis maps, tree location maps and other supporting graphics. Mr. Respall provides geospatial analysis and support involving geodesy, hydrology, watershed studies, project impact analysis, CNDDB species, and critical habitat and mitigation information. Primary experience evolved from conventional surveying and civil engineering practices to advanced GPS and GIS based technology.
Responsibilities: Figure preparation and spatial analysis.

Jeffery Little, Vice President, Sycamore Environmental.
Responsibilities: Principal in charge.

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APPENDIX A.

Database Queries

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: November 16, 2017
Consultation Code: 08ESMF00-2018-SLI-0446
Event Code: 08ESMF00-2018-E-01190
Project Name: Stonehenge Springs

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2018-SLI-0446

Event Code: 08ESMF00-2018-E-01190

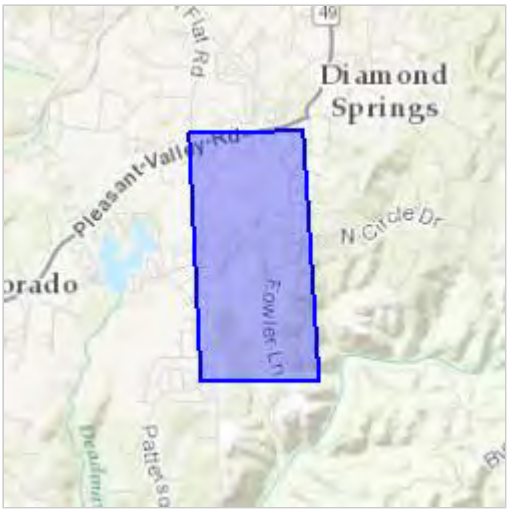
Project Name: Stonehenge Springs

Project Type: DEVELOPMENT

Project Description: Residential development

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.68514073341554N120.81823843199895W



Counties: El Dorado, CA

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: https://ecos.fws.gov/ecp/species/321

Flowering Plants

NAME	STATUS
Layne's Butterweed *Senecio layneae*	Threatened

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/4062

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Shingle Springs (3812068) OR Coloma (3812078) OR Garden Valley (3812077) OR Slate Mtn. (3812076) OR Placerville (3812067) OR Camino (3812066) OR Latrobe (3812058) OR Fiddletown (3812057) OR Aukum (3812056))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Allium jepsonii Jepson's onion	PMLIL022V0	None	None	G2	S2	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Calochortus clavatus var. avius Pleasant Valley mariposa-lily	PMLIL0D095	None	None	G4T2	S2	1B.2
Calystegia stebbinsii Stebbins' morning-glory	PDCON040H0	Endangered	Endangered	G1	S1	1B.1
Calystegia vanzuukiae Van Zuuk's morning-glory	PDCON040Q0	None	None	G2Q	S2	1B.3
Carex cyrtostachya Sierra arching sedge	PMCYP03M00	None	None	G2	S2	1B.2
Carex xerophila chaparral sedge	PMCYP03M60	None	None	G2	S2	1B.2
Ceanothus roderickii Pine Hill ceanothus	PDRHA04190	Endangered	Rare	G1	S1	1B.1
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	
Central Valley Drainage Resident Rainbow Trout Stream Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	GNR	SNR	
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G3	S3	1B.2
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Crocanthemum suffrutescens Bisbee Peak rush-rose	PDCIS020F0	None	None	G2?Q	S2?	3.2
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Fremontodendron decumbens Pine Hill flannelbush	PDSTE03030	Endangered	Rare	G1	S1	1B.2
Galium californicum ssp. sierrae El Dorado bedstraw	PDRUB0N0E7	Endangered	Rare	G5T1	S1	1B.2
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Packera layneae Layne's ragwort	PDAST8H1V0	Threatened	Rare	G2	S2	1B.2
Pekania pennanti fisher - West Coast DPS	AMAJF01021	None	Candidate Threatened	G5T2T3Q	S2S3	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	GNR	SNR	
Strix nebulosa great gray owl	ABNSB12040	None	Endangered	G5	S1	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3
Wyethia reticulata El Dorado County mule ears	PDAST9X0D0	None	None	G2	S2	1B.2

Record Count: 37

CNPS California Native Plant Society Inventory of Rare and Endangered Plants

Plant List

16 matches found. Click on scientific name for details

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3812078, 3812077, 3812076, 3812068, 3812067, 3812066, 3812058 3812057 and 3812056;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	1B.2	S2	G2
Arctostaphylos nissenana	Nissenan manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	1B.2	S1	G1
Calochortus clavatus var. avius	Pleasant Valley mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G4T2
Calystegia stebbinsii	Stebbins' morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jul	1B.1	S1	G1
Calystegia vanzuukiae	Van Zuuk's morning-glory	Convolvulaceae	perennial rhizomatous herb	May-Aug	1B.3	S2	G2Q
Carex cyrtostachya	Sierra arching sedge	Cyperaceae	perennial herb	May-Aug	1B.2	S2	G2
Carex xerophila	chaparral sedge	Cyperaceae	perennial herb	Mar-Jun	1B.2	S2	G2
Ceanothus roderickii	Pine Hill ceanothus	Rhamnaceae	perennial evergreen shrub	Apr-Jun	1B.1	S1	G1
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	May-Jun	1B.2	S3	G3
Erigeron miser	starved daisy	Asteraceae	perennial herb	Jun-Oct	1B.3	S3?	G3?
Fremontodendron decumbens	Pine Hill flannelbush	Malvaceae	perennial evergreen shrub	Apr-Jul	1B.2	S1	G1
Galium californicum ssp. sierrae	El Dorado bedstraw	Rubiaceae	perennial herb	May-Jun	1B.2	S1	G5T1
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.2	S2	G2
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5
Wyethia reticulata	El Dorado County mule ears	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 08 May 2018].

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APPENDIX B.

Species Evaluated Table

Special-Status Species from USFWS Letter, CNDDB Data, CNPS Data

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Fish					
Hypomesus transpacificus Delta smelt	T, CH	E	1	Euryhaline (tolerant of a wide salinity range) species that spawns in freshwater dead-end sloughs and shallow edge-waters of channels of the Delta (USFWS 1994). Confined to the San Francisco Estuary, principally in the Delta and Suisun Bay. Currently found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo cos. Can be washed into San Pablo Bay during high-outflow periods, but do not establish permanent populations there (Moyle 2002).	No. The BSA is outside the range and there is no suitable habitat. The BSA is not in critical habitat.
Amphibians					
Rana boylii Foothill yellow-legged frog	--	CT, SSC	2	Found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Egg clusters are attached to gravel or rocks in moving water near stream margins. This species is rarely encountered (even on rainy nights) far from permanent water. Its elevation range extends from near sea level to 6,370 ft in the Sierra (CWHR 2016).	No. The intermittent channels hydroperiod is insufficient.
Rana draytonii California red-legged frog	T, CH	SSC	1, 2	Inhabits ponds, quiet pools of streams, marshes, and riparian areas with dense, shrubby, or emergent vegetation. Requires permanent or nearly permanent pools for larval development (CWHR 2016; USFWS 2010). May use ephemeral water bodies for breeding if permanent water is nearby (Thomson *et al.* 2016). The range of CA red-legged frog extends from near sea level to approximately 5,200 ft, though nearly all sightings have occurred below 3,500 ft. CA red-legged frog was probably extirpated from the floor of the Central Valley before 1960 (USFWS May 2002).	No. The channels in the BSA do not have sufficient water or flow regimes to provide breeding habitat. There are no known breeding populations within dispersal distance. The pond in the BSA has a large bullfrog population.
Reptiles					
Emys marmorata Western pond turtle	--	SSC	2	Occurs in suitable aquatic habitat throughout CA, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries from near sea level to approximately 4,690 ft. Associated with permanent or nearly permanent water in a wide variety of habitats with basking sites such as submerged logs, rocks, mats of floating vegetation, or open mud banks (CWHR 2016).	Yes. See discussion.

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Phrynosoma blainvillii Coast (California) horned lizard	--	SSC	2	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats, especially sandy areas, washes, flood plains and wind-blown deposits. Basks in the early morning (CWHR 2016). Needs loose or sandy soil for burrowing and reproduction. Needs open areas for thermoregulation and shrub cover or kangaroo rat burrows for refugia. Negatively associated with non-native Argentine ant (*Linepithema humile*) presence; positively associated with presence of native ants, and chaparral vegetation (Thomson *et al.* 2016). Occurs in the Sierra Nevada foothills from Butte Co. to Kern Co. and throughout the central and southern California coast. Found up to 4,000 ft in the northern end of its range and 6,000 ft in the southern end (CWHR 2016).	Yes. See discussion.
Birds					
Accipiter gentilis Northern goshawk	--	SSC	2	Breeds in the North Coast Ranges, Sierra Nevada, Klamath, Cascade, and Warner Mountains. Also breeds in the Piños, San Jacinto, San Bernardino, and White Mtns. Remains yearlong in breeding areas as an uncommon resident. Prefers middle and higher elevations in mature, dense conifer forests. Habitat requirements include meadows and riparian habitat. Casual in winter along north coast, throughout foothills, and in northern deserts, where it may be found in pinyon-juniper and low-elevation riparian habitats. Usually nests near water on north slopes, in the densest parts of vegetation stands, staying close to openings (CWHR 2016). In the west side Ponderosa pine zone, northern goshawks are known to nest down to approximately 2,500 ft. Nest stands consistently have larger trees, greater canopy cover, and relatively more open understories than stands lacking nests (Shuford and Gardali 2008). Goshawks generally do not nest near areas of human habitation or paved roads (USFWS 2001).	No. There are no dense mature conifer groves. The BSA is below the nesting elevation range.
Agelaius tricolor Tricolored blackbird	--	SSC	2	Mostly a resident in California. Common locally throughout the Central Valley and in coastal districts from Sonoma Co. south. Breeds near freshwater, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, tall herbs, and wild rose. Highly colonial; nesting area must be large enough to support a minimum colony of about 50 pairs (CWHR 2016). Chooses areas with widespread water and large, thick patches of vegetation for colonies to reduce predation (Hamilton 2004).	No. There is no suitable nesting habitat.
Riparia riparia Bank swallow	--	T	2	Found primarily west of CA deserts in riparian and other lowland habitats during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine textured sandy soils, into which it digs nesting holes. About 75% of the breeding population in CA occurs along banks of the Sacramento and Feather Rivers in the northern Central Valley. Other colonies are known from the central coast from Monterey to San Mateo cos., and in northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc cos. Breeding colonies can have between 10 and 1,500, but typically between 100 and 200, nesting pairs (CWHR 2016).	No. There is no suitable nesting habitat.

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Strix nebulosa Great gray owl	--	E	2	Occurs between 4,500 and 7,500 ft in the Sierra Nevada in the vicinity of Quincy in Plumas Co. south to Yosemite. Occasionally reported in Northwestern CA in winter and in the Warner Mtns. in summer. Breeds in old-growth red fir, mixed conifer, and lodgepole pine habitats in the vicinity of wet meadows. Uses trees in dense forest stands for roosting cover and small trees and snags in or bordering meadows for hunting perches. Nests in large, broken-topped snags 25 to72 ft above the ground. Often uses old hawk or eagle nests (CWHR 2016). Nesting sites are of concern to CDFW (2016c).	No. The BSA is below the elevation range. There is no old-growth coniferous forest suitable for nesting habitat.
Mammals					
Pekania pennanti Fisher – West Coast DPS	FT	CT/ SSC	2	Uncommon permanent resident of the Sierra Nevada, Cascades, Klamath Mountains, and the North Coast Ranges (CWHR 2016). Occurs above 3,200 ft in the Sierra Nevada and Cascades (Jameson and Peeters 2004). Today, fisher distribution in CA is represented by two populations: northwestern California and the southern Sierra Nevada. Fishers apparently no longer inhabit the area between the Pit River in the northern Sierra Nevada/Cascades to the Merced River in the southern Sierra Nevada; a separation of approximately 270 miles. There is little empirical evidence that fishers previously inhabited this gap in the Sierra Nevada (CDFW 2010a). Occurs in intermediate- to large-stages of coniferous forest and deciduous-riparian habitat with high percent canopy closure. Canopy closure must be greater than 50% to be suitable habitat. Dens in a variety of protected cavities, brush piles, logs, and upturned trees. Hollow logs, trees, and snags are especially important. Mostly nocturnal and crepuscular, with some diurnal activity (CWHR 2016).	No. There is no mature conifer forest with >50% canopy cover. The BSA occurs below the elevation range.
Antrozous pallidus Pallid bat	--	--	2	Occupies a wide variety of habitats including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species is most common in open, dry habitats with rocky areas for roosting. It feeds on a wide variety of insects and arachnids, foraging over open ground, usually 1.6 to 8 ft above level ground. Day roosts in caves, crevices, mines, and occasionally buildings and in hollow trees. Roost must protect bats from high temperatures. Night roosts may be in more open sites, such as porches and open buildings. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Locally common in low elevations in CA, it occurs throughout CA except for the high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County. It is a yearlong resident in most of the range (CHWR 2016).	No. There are no suitable rock outcrops/cliffs, or mature conifer forests likely to have suitable hollow trees.
Plants		**/ CNPS [d]**			
Allium jepsonii Jepson's onion	--	--/ 1B.2	2	Bulbiferous herb found in serpentine or volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 984 to 4,331 ft. Known from Butte, El Dorado, Placer, and Tuolumne cos. Blooms April through August (Baldwin *et al.* 2012; CNPS 2016).	No. There are no suitable soils.

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Arctostaphylos nissenana Nissenan manzanita	--	--/ 1B.2	2	Perennial evergreen shrub found on highly acidic rocky (slate and shale) soils. Often associated with closed-cone conifer forest and chaparral from about 1,475 to 5,400 ft (USFS 2009, CNPS 2016, Jepson 2018). Known from approximately 15 occurrences in Placer, El Dorado and Tuolumne cos. Blooms February through March (Baldwin *et al.* 2012; CNPS 2016).	Yes. See discussion.
Calochortus clavatus var. *avius* Pleasant Valley mariposa lily	--	--/1B.2	2	Perennial bulbiferous herb found in openings of lower montane, mixed conifer forests, on Josephine silt loam and volcanic soils from 1,000 to 5,900 ft (USFS 2009 and CNPS 2016). Known from Amador, Calaveras, El Dorado, and Placer cos. Presumed extirpated from Mariposa Co. Blooms May through July (CNPS 2016).	No. There is no suitable habitat and soil.
Calystegia stebbinsii Stebbins' morning-glory	E	E/ 1B.1	2	Perennial rhizomatous herb found in serpentine or gabbroic soils in openings in chaparral and cismontane woodland from 607 to 3,576 ft. Known from El Dorado and Nevada cos. Blooms April through July (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils.
Calystegia vanzuukiae Van Zuuk's morning-glory	--	--/1B.3	2	Perennial rhizomatous herb found in gabbroic or serpentinite soils in chaparral and cismontane woodlands from 1,640 to 3,870 ft. Known only from the Central Sierra Nevada foothills, from El Dorado and Placer cos. Blooms May through August (CNPS 2016).	No. There are no suitable soils.
Carex cyrtostachya Sierra arching sedge	--	--/1B.2	2	Perennial herb found in mesic lower montane coniferous forest, meadows and seeps, marshes and swamps, and riparian forest margins from 2,000 to 4,460 ft. Known from Butte, El Dorado, and Yuba cos. Blooms May through August (CNPS 2016).	Yes. See discussion.
Carex xerophila Chaparral sedge	--	--/1B.2	2	Perennial herb found in serpentinite or gabbroic soil in chaparral, cismontane woodland, and lower montane coniferous forest from 1,445 to 2,530 ft. Known from Butte, El Dorado, Nevada and Yuba cos. Blooms March through June (CNPS 2016).	No. There are no suitable soils.
Ceanothus roderickii Pine Hill ceanothus	E	R/ 1B.1	2	Perennial evergreen shrub found on serpentine or gabbroic soils in chaparral and cismontane woodland from 804 to 3,576 ft. Known from less than 10 occurrences in El Dorado Co. Blooms April through June (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils.
Chlorogalum grandiflorum Red Hills soaproot	--	--/ 1B.2	2	Perennial bulbiferous herb found in serpentine, gabbroic, and other soils in chaparral, cismontane woodland, and lower montane coniferous forest from 800 to 5,540 ft. Known from Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne cos. Blooms May through June (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils. In El Dorado County this species is known from the gabbro soils of the Pine Hill formation, elsewhere in the County.
Erigeron miser Starved daisy	--	--/1B.3	2	Perennial herb found on rocky substrates in upper montane coniferous forest from 6,000 to 8,600 ft. This species is endemic to CA, and found in Lassen, Mono, Nevada and Placer Cos. Blooms June through October (CNPS 2016).	No. The BSA is below the elevation range and there is no suitable habitat.
Fremontodendron decumbens Pine Hill flannelbush	E	R/ 1B.2	2	Perennial evergreen shrub found on rocky, gabbroic, and serpentine soil in chaparral and cismontane woodland from 1,394 to 2,494 ft. Known from 10 occurrences in El Dorado, Nevada, and Yuba cos. Uncertain about distribution or identity in Nevada and Yuba cos. Blooms April through July (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils.

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Galium californicum ssp. *sierrae* El Dorado bedstraw	E	R/ 1B.2	2	Perennial herb found on gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 328 to 1,920 ft. Known from fewer than 20 occurrences in El Dorado Co. (CNPS 2016). Blooms March through July (Baldwin *et al.* 2012).	No. There are no suitable soils.
Horkelia parryi Parry's horkelia	--	--/ 1B.2	2	Perennial herb found on Ione formation and in other soils in chaparral and cismontane woodland from 260 to 3,510 ft. Known from Amador, Calaveras, El Dorado, and Mariposa cos. Blooms April through September (Baldwin *et al.* 2012, CNPS 2016). Jepson (2018) describes the habitat as open chaparral.	Yes. See discussion.
Packera (=Senecio) layneae Layne's ragwort	T	R/ 1B.2	1, 2	Perennial herb found in rocky, serpentine, or gabbroic soils in chaparral and cismontane woodland from 650 to 3,560 ft. Known from Butte, El Dorado, Placer, Tuolumne, and Yuba cos. Blooms April through August (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils.
Viburnum ellipticum Oval-leaved viburnum	--	--/ 2B.3	2	Deciduous shrub found in chaparral, cismontane woodland, and lower montane coniferous forest from 700 to 4,600 ft. Known from Alameda, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Lake, Mendocino, Mariposa, Napa, Placer, Shasta, Solano, Sonoma, and Tehama cos. Blooms May through August (Baldwin *et al.* 2012, CNPS 2016). Jepson (2018) describes the habitat as chaparral, yellow-pine forest, generally on north-facing slopes.	Yes. See discussion.
Wyethia reticulata El Dorado County mule ears	--	--/ 1B.2	2	Perennial rhizomatous herb found on clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 600 to 2,100 ft. Known from El Dorado and Yuba cos. Blooms April through August (Baldwin *et al.* 2012, CNPS 2016).	No. There are no suitable soils.

Special-Status Species/ Common Name	Federal Status [a, b]	State Status [a, b]	Source [c]	Habitat Requirements	Potential to Occur in the BSA
Natural Communities					
Central Valley drainage hardhead/ squawfish stream	--	--	2	Hardhead occur in low- to mid-elevation streams in the main Sacramento-San Joaquin drainage and in the Russian River. Their range extends from the Kern River in Kern County, in the south, to the Pit River in Modoc County in the north. In the San Joaquin drainage, the species is scattered in tributary streams and absent from valley reaches of the San Joaquin River. In the Sacramento drainage, the hardhead is present in most large tributary streams as well as in the Sacramento River. Hardhead are typically found in undisturbed areas of larger low- to mid-elevation streams, although they are also found in the mainstem Sacramento River at low elevations and in its tributaries to about 4,920 ft. They prefer clear, deep (>32 inches) pools and runs with sand-gravel-boulder substrates and slow velocities. Hardhead are always found in association with Sacramento pikeminnow (squawfish) and usually with Sacramento sucker. They tend to be absent from streams where introduced species, especially centrarchids (sunfish), predominate and from streams that have been severely altered by human activity. Sacramento pikeminnow occur in clear rivers and creeks of central California and occur in small numbers in the Sacramento-San Joaquin Delta. They are most characteristic of low- to mid-elevation streams with deep pools, slow runs, and undercut banks, and overhanging vegetation. They are most abundant in lightly disturbed, tree-lined reaches that also contain other native fish (Moyle 2002).	No. This community does not occur. The intermittent channels in the BSA are too small to support this community.
Central Valley drainage resident rainbow trout stream	--	--	2	Rainbow trout occur in low order (high elevation) cold streams with a high gradient. These streams are dominated by rainbow trout and often riffle sculpin (Moyle and Ellison 1991).	No. This community does not occur. The intermittent channels in the BSA are too small to support this community.
Sacramento-San Joaquin foothill/valley ephemeral stream	--	--	2	Low elevation streams that flow primarily in response to winter and spring rainfall. Found in oak woodland/ valley grassland areas. Some water may be present in semi-permanent bedrock pools. Streams have a distinct succession of invertebrates and may be important spawning areas for Sierran treefrogs (*Pseudacris sierra*) and newts (*Taricha* spp.; Moyle and Ellison 1991).	Yes. See discussion.

[a] **Listing Status:** **E** = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare; **D** = Delisted; ***** = Possibly extinct.

[b] **Other Codes:** **SSC** = CA Species of Special Concern; **FP** = CA Fully Protected; **Prot** = CA Protected; **CH =** Critical habitat designated.

CNPS Rank: (plants only): **1A** = Presumed Extinct in CA; **1B** = Rare or Endangered (R/E) in CA and elsewhere; **2** = R/E in CA and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution

CNPS List Decimal Extensions: **.1** = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); **.2** = Fairly endangered in CA (20-80% of occurrences threatened); **.3 =** Not very endangered in CA (< 20% of occurrences threatened or no current threats known).

[c] **Source:** **1** = USFWS letter. **2** = CNDDB/CNPS. **3 =** Observed or included by Sycamore Environmental.

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APPENDIX C.

Plant and Wildlife Species Observed

Stonehenge Springs
El Dorado County, CA

Plant Species Observed.

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
FERNS						
Dryopteridaceae	*Dryopteris arguta*	Wood fern	N			X
Pteridaceae	*Pentagramma triangularis*	Goldback fern	N		X	X
CONIFERS						
Cupressaceae	*Calocedrus decurrens* [3]	Incense cedar	N			X
Pinaceae	*Pinus ponderosa*	Ponderosa pine	N		X	X
	Pinus sabiniana	Foothill pine	N		X	X
	Pseudotsuga menziesii var. *menziesii* [3]	Douglas-fir	N			X
EUDICOTS						
Amaranthaceae	*Amaranthus* sp.	Tumbleweed	I		X	
Anacardiaceae	*Toxicodendron diversilobum*	Western poison oak	N		X	X
Apiaceae	*Anthriscus caucalis*	Bur-chervil	I		X	
	Daucus carota	Carrot, Queen Anne's lace	I		X	X
	Daucus pusillus	Daucus	N		X	X
	Eryngium castrense	Great Valley coyote-thistle	N		X	X
	Sanicula bipinnata	Poison sanicle	N		X	
	Sanicula bipinnatifida	Purple sanicle	N		X	X
	Sanicula crassicaulis	Sanicula	N		X	X
	Torilis arvensis	Hedge parsley	I	Moderate	X	X
Apocynaceae	*Asclepias cordifolia*	Purple milkweed	N		X	X
	Asclepias fascicularis	Narrow-leaf milkweed	N		X	X
	Vinca major	Greater periwinkle	I	Moderate		X
Asteraceae	*Achillea millefolium*	Yarrow	N		X	X
	Agoseris grandiflora	Agoseris	N		X	X
	Agoseris retrorsa	Agoseris	N		X	X
	Agoseris sp.	Agoseris	N		X	
	Ambrosia psilostachya	Western ragweed	N			X
	Anaphalis margaritacea	Pearly everlasting	N			X
	Anthemis cotula	Mayweed	I			X
	Artemisia douglasiana	Mugwort	N		X	X
	Baccharis pilularis	Coyote brush	N		X	X
	Calycadenia sp.	Calycadenia	N		X	
	Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	I	Moderate	X	X
	Centaurea solstitialis	Yellow star-thistle	I	High	X	X
	Centromadia fitchii	Spikeweed	N		X	X
	Centromadia sp.	Tarweed	N			X
	Chondrilla juncea	Skeleton weed	I	Moderate	X	X
	Cichorium intybus	Chicory	I		X	X
	Cirsium vulgare	Thistle	I		X	X
	Erigeron canadensis	Horseweed	N			X
	Erigeron foliosus var. *foliosus*	Leafy fleabane	N			X
	Eriophyllum lanatum	Common woolly sunflower	N		X	X
	Gnaphalium palustre	Western marsh cudweed	N		X	
	Grindelia hirsutula	Gumplant	N		X	X
	Holocarpha virgata ssp. *virgata*	Tarweed, tarplant	N		X	X
	Hypochaeris glabra	Smooth cat's-ear	I	Limited	X	
	Hypochaeris radicata	Rough cat's-ear	I	Moderate	X	X
	Jensia rammii	Tarweed, tarplant	N		X	

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
	Lactuca saligna	Lettuce	I			X
	Lactuca serriola	Prickly lettuce	I		X	X
	Leontodon saxatilis	Hairy hawkbit	I		X	X
	Lessingia nemaclada	Lessingia	N		X	
	Logfia gallica	Daggerleaf cottonrose	I		X	X
	Madia elegans	Common madia	N		X	X
	Madia exigua	Tarweed, tarplant	N		X	X
	Madia gracilis	Gumweed	N		X	
	Madia subspicata	Tarweed, tarplant	N		X	X
	Matricaria discoidea	Pineapple weed	I		X	X
	Micropus californicus ssp. *californicus*	Cottontop	N		X	
	Pseudognaphalium sp.	Cudweed, everlasting	--			X
	Pseudognaphalium beneolens	Cudweed, everlasting	N		X	
	Pseudognaphalium californicum	Cudweed, everlasting	N		X	
	Psilocarphus brecissimus var. *brevissimus*	Delta woolly-marbles	N		X	
	Psilocarphus tenellus var. *globiferus*	Slender woolly-marbles	N		X	
	Psilocarphus tenellus var. *tenellus*	Slender woolly-marbles	N		X	X
	Silybum marianum	Milk thistle	I	Limited	X	X
	Solidago velutina ssp. *californica*	California goldenrod	N		X	X
	Soliva sessilis	Soliva	I		X	X
	Sonchus asper	Prickly sow thistle	I		X	X
	Tragopogon sp.	Goat's beard, salsify	I			X
	Tragopogon dubius	Yellow salsify	I		X	
	Tragopogon porrifolius	Salsify, oyster plant	I		X	
	Wyethia sp.	Mule's ears	N		X	
	Wyethia angustifolia	Mule's ears	N		X	X
	Wyethia helenioides	Mule's ears	N		X	X
	Xanthium strumarium	Cocklebur	N		X	X
Bignoniaceae	*Catalpa* sp.	Southern catalpa	I			X
Boraginaceae	*Amsinckia menziesii*	Common fiddleneck	N		X	X
	Eriodictyon californicum	California yerba santa	N		X	X
	Myosotis discolor	Changing forget-me-not	I			X
	Nemophila heterophylla	White nemophila	N		X	X
	Pectocarya pusilla	Pectocarya	N		X	
	Phacelia sp.	Phacelia	N		X	
	Plagiobothrys nothofulvus	Rusty popcorn flower	N		X	X
	Plagiobothrys stipitatus var. *micranthus*	Stipitate popcorn flower	N		X	X
Brassicaceae	*Hirschfeldia incana*	Summer mustard	I	Moderate	X	
	Lepidium oblongum var. *oblongum*	Peppergrass, peppercress	N		X	
	Nasturtium officinale	Water cress	I		X	X
	Rorippa curvisiliqua	Yellow cress	N		X	X
	Sisymbrium officinale	Hedge mustard	I			X
	Thysanocarpus curvipes	Lacepod, fringepod	N		X	
	Thysanocarpus radians	Lacepod, fringepod	N		X	
Campanulaceae	*Heterocodon rariflorum*	Heterocodon	N			X
Caprifoliaceae	*Lonicera interrupta*	Honeysuckle	N		X	X
	Symphoricarpos mollis	Snowberry	N		X	
Caryophyllaceae	*Cerastium glomeratum*	Mouse-ear chickweed	I		X	X
	Scleranthus annuus ssp. *annuus*	Knawel	I		X	
	Silene gallica	Small-flower catchfly	I		X	X
	Spergularia rubra	Red sand-spurrey	I		X	X
	Stellaria media	Common chickweed	I		X	X
Convolvulaceae	*Calystegia occidentalis*	Morning-glory	N		X	X
	Convolvulus arvensis	Bindweed	I		X	X
Crassulaceae	*Crassula tillaea*	Crassula	I		X	X

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
Cucurbitaceae	*Marah oregana*	Coast man-root	N		X	X
Ericaceae	*Arctostaphylos nissenana* [4]	Nissenan manzanita	N		X	X
	Arctostaphylos viscida ssp. *viscida*	Manzanita	N		X	X
Euphorbiaceae	*Croton setigerus*	Turkey-mullein	N		X	X
	Euphorbia lathyris	Caper spurge	I		X	X
Fabaceae	*Acmispon americanus* var. *americanus*	Deervetch	N		X	X
	Acmispon brachycarpus	Deervetch	N			X
	Acmispon parviflorus	Deervetch	N		X	X
	Lathyrus cicera	Wild pea	I		X	X
	Lathyrus latifolius	Perennial sweet pea	N			X
	Lathyrus sulphureus var. *sulphureus*	Wild pea	N		X	
	Lotus corniculatus	Bird's-foot trefoil	I		X	
	Lupinus albicaulis	Lupine	N		X	
	Lupinus bicolor	Miniature lupine	N		X	X
	Lupinus formosus var. *robustus*	Lupine	N		X	
	Lupinus nanus	Lupine	N		X	
	Medicago polymorpha	California burclover	I	Limited	X	
	Trifolium ciliolatum	Foothill clover	N			X
	Trifolium dubium	Little hop clover	I		X	X
	Trifolium glomeratum	Clustered clover	I		X	X
	Trifolium hirtum	Rose clover	I	Limited	X	X
	Trifolium microcephalum	Small-head clover	N			X
	Trifolium repens	White clover	I		X	
	Trifolium subterraneum	Subterranean clover	I		X	X
	Trifolium wormskioldii	Cow clover	N		X	
	Vicia hirsuta	Vetch	I		X	
	Vicia sativa	Spring vetch	I		X	X
	Vicia villosa	Hairy vetch, winter vetch	I		X	X
Fagaceae	*Quercus berberidifolia*	Scrub oak	N			X
	Quercus chrysolepis	Canyon live oak	N		X	X
	Quercus douglasii	Blue oak	N		X	X
	Quercus kelloggii	California black oak	N		X	X
	Quercus lobata	Valley oak, roble	N		X	X
	Quercus wislizeni var. *wislizeni*	Interior live oak	N		X	X
	Quercus x morehus	Oracle oak	N		X	X
Gentianaceae	*Zeltnera muehlenbergii*	Monterey centaury	N		X	X
Geraniaceae	*Erodium botrys*	Storksbill, filaree	I		X	
	Erodium cicutarium	Redstem filaree	I	Limited	X	
	Erodium moschatum	Greenstem filaree	I		X	
	Erodium sp.	Storksbill, filaree	--		X	
	Geranium dissectum	Cranesbill, geranium	I	Limited	X	X
	Geranium molle	Cranesbill, geranium	I		X	
Hypericaceae	*Hypericum perforatum* ssp. *perforatum*	Klamathweed	I	Moderate	X	X
Juglandaceae	*Juglans hindsii*	Northern CA black walnut	N		X	X
Lamiaceae	*Marrubium vulgare*	Horehound	I	Limited		X
	Melissa officinalis	Lemon balm	I			X
	Mentha pulegium	Pennyroyal	I	Moderate	X	X
	Monardella candicans [4, 5]	Sierra monardella	N		X	X
	Monardella villosa ssp. *villosa* [4]	Coyote mint	N			X
	Pogogyne serpylloides	Thymeleaf beardstyle	N		X	
	Scutellaria californica	California skullcap	N		X	X
	Trichostema lanceolatum	Vinegar weed	N		X	X
Linaceae	*Linum usitatissimum*	Flax	I		X	
Lythraceae	*Lythrum hyssopifolia*	Loosestrife	I	Limited	X	X
	Lythrum portula	Loosestrife	I			X
Malvaceae	*Malva* sp.	Mallow	--			X

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
	Sidalcea malviflora	Checkerbloom	N		X	X
Montiaceae	*Claytonia perfoliata*	Miner's lettuce	N			
Myrsinaceae	*Anagallis arvensis*	Scarlet pimpernel	I		X	
Onagraceae	*Clarkia biloba* ssp. *biloba*	Clarkia	N		X	X
	Clarkia purpurea	Clarkia	N		X	X
	Epilobium brachycarpum	Willowherb	N		X	X
	Epilobium ciliatum	Willowherb	N		X	X
	Epilobium densiflorum	Willowherb	N		X	
	Epilobium torreyi	Willowherb	N		X	X
	Ludwigia peploides	Water primrose	I		X	
Orobanchaceae	*Castilleja attenuata*	Valley tassels	N		X	X
	Castilleja lacera	Paintbrush, owl's-clover	N		X	X
	Parentucellia viscosa	Parentucellia	I	Limited		X
	Triphysaria eriantha	Butter-and-eggs	N		X	X
Oxalidaceae	*Oxalis micrantha*	Dwarf wood-sorrel	I			X
Papaveraceae	*Eschscholzia californica*	California poppy	N		X	X
	Eschscholzia lobbii	Frying pans	N		X	
Phrymaceae	*Mimulus aurantiacus*	Monkeyflower	N		X	X
	Mimulus guttatus	Monkeyflower	N		X	X
Plantaginaceae	*Callitriche heterophylla* var. *het.*	Water-starwort	N		X	X
	Collinsia heterophylla	Chinese-houses	N		X	X
	Gratiola ebracteata	Bractless hedge-hyssop	N		X	X
	Kickxia elatine	Kickxia	I		X	X
	Plantago erecta	Plantain	N		X	X
	Plantago lanceolata	English plantain	I	Limited	X	X
	Veronica arvensis	Speedwell, brooklime	I			X
	Veronica peregrina ssp. *xalapensis*	Purslane speedwell	N			X
Polemoniaceae	*Allophyllum divaricatum*	Allophyllum	N		X	
	Allophyllum gilioides ssp. *gilioides*	Allophyllum	N		X	
	Gilia capitata	Bluehead gilia	N		X	
	Leptosiphon bicolor	Leptosiphon	N		X	X
	Leptosiphon parviflorus	Leptosiphon	N		X	
	Navarretia intertexta ssp. *intertexta*	Navarretia	N		X	X
	Navarretia pubescens	Navarretia	N			X
	Navarretia squarrosa	skunkweed	N		X	
Polygalaceae	*Polygala californica*	California milkwort	N			X
Polygonaceae	*Eriogonum nudum*	Wild buckwheat	N		X	
	Persicaria sp.	Smartweed	--		X	X
	Polygonum sp.	Knotweed	--		X	
	Polygonum aviculare	Knotweed, knotgrass	I		X	X
	Rumex acetosella	Sheep sorrel	I	Moderate	X	X
	Rumex conglomeratus	Dock	I			X
	Rumex crispus	Curly dock	I	Limited	X	X
	Rumex pulcher	Fiddle dock	I		X	X
Portulaceae	*Portulaca oleracea*	Purslane	I			X
Ranunculaceae	*Delphinium hansenii* ssp. *hansenii*	Hansen's larkspur	N		X	
	Delphinium variegatum ssp. *var.*	Royal larkspur	N		X	X
	Ranunculus bonariensis var. *trisepalus*	Buttercup	N		X	X
	Ranunculus muricatus	Buttercup	I		X	
	Ranunculus occidenatlis	Buttercup	N		X	
Rhamnaceae	*Ceanothus cuneatus* var. *cuneatus*	Buckbrush	N		X	X
	Ceanothus integerrimus	Deer brush	N		X	X
	Ceanothus lemmonii	California-lilac	N		X	
	Ceanothus tomentosus	California-lilac	N		X	
	Frangula californica ssp. *tomentella*	California coffee berry	N		X	X
	Rhamnus ilicifolia	Hollyleaf redberry	N		X	X
Rosaceae	*Adenostoma fasciculatum*	Chamise	N		X	X

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
	Cotoneaster sp.	Cotoneaster	I		X	
	Drymocallis glandulosa	Woodbeauty	N		X	X
	Heteromeles arbutifolia	Christmas berry, toyon	N		X	X
	Horkelia californica var. *elata*	Horkelia	N		X	
	Prunus cerasifera	Cherry plum	I	Limited	X	X
	Pyracantha sp.	Firethorn	I		X	X
	Rosa californica	California rose	N		X	X
	Rubus armeniacus	Himalayan blackberry	I	High	X	X
Rubiaceae	*Galium aparine*	Goose grass	N		X	X
	Galium parisiense	Wall bedstraw	I		X	X
	Galium porrigens var. *tenue*	Climbing bedstraw	N		X	X
Salicaceae	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood	N		X	
	Salix exigua	Willow	N		X	X
	Salix laevigata	Red willow	N		X	
	Salix lasiolepis	Arroyo willow	N		X	X
Sapindaceae	*Aesculus californica*	California buckeye	N		X	X
Saxifragaceae	*Lithophragma affine*	Woodland star	N		X	
	Lithophragma bolanderi	Woodland star	N		X	
Scrophulariaceae	*Scrophularia californica*	California figwort	N		X	
	Verbascum blattaria	Moth mullein	I		X	X
	Verbascum thapsus	Woolly mullein	I	Limited	X	X
Simaroubaceae	*Ailanthus altissima*	Tree of heaven	I	Moderate	X	X
Solanaceae	*Nicotiana* sp.	Tobacco	--		X	X
Valerianaceae	*Plectritis macrocera*	Plectritis	N		X	
Verbenaceae	*Verbena lasiostachys* var. *lasiostachys*	Vervain	N		X	X
Violaceae	*Viola purpurea* ssp. *quercetorum*	Violet	N		X	X
Viscaceae	*Phoradendron leucarpum* ssp. *macrophyllum*	American mistletoe	N		X	
	Phoradendron leucarpum ssp. *tomentosum*	American mistletoe	N		X	X
Zygophyllaceae	*Tribulus terrestris*	Puncture vine, caltrop	I			X
MONOCOTS						
Agavaceae	*Chlorogalum pomeridianum* var. *pomeridianum*	Soaproot	N		X	X
Alismataceae	*Alisma triviale*	Water-plantain	N		X	X
	Sagittaria latifolia	Arrowhead	N		X	
Cyperaceae	*Carex* sp.	Sedge	--		X	
	Carex barbarae	Whiteroot sedge	N		X	X
	Carex fracta	Fragile-sheathed sedge	N			X
	Carex praegracilis	Black creeper	N		X	X
	Carex tumulicola	Foothill sedge	N			X
	Cyperus eragrostis	Nutsedge	N		X	X
	Eleocharis macrostachya	Spikerush	N		X	X
	Eleocharis pachycarpa	Spikerush	I		X	X
	Schoenoplectus acutus var. *occidentalis*	Common tule	N		X	
Iridaceae	*Sisyrinchium bellum*	Western blue-eyed-grass	N		X	
Juncaceae	*Juncus balticus*	Baltic rush	N			X
	Juncus bufonius	Toad rush	N		X	X
	Juncus dubius	Mariposa rush	N			X
	Juncus mexicanus	Mexican rush	N		X	
	Juncus occidentalis	Western rush	N		X	X
	Juncus patens	Spreading rush	N			X
	Juncus phaeocephalus	Rush	N		X	X
	Juncus xiphioides	Iris-leaved rush	N		X	
	Luzula comosa	Hairy wood rush	N		X	X
Juncaginaceae	*Triglochin scilloides*	Flowering-quillwort	N		X	X
Liliaceae	*Calochortus albus*	White globe lily	N		X	

Family	Scientific Name	Common Name	N/I[1]	Cal-IPC	Year observed	
					2008	2017
	Calochortus luteus	Calochortus	N			X
	Calochortus monophyllus	Yellow star-tulip	N		X	
Orchidaceae	*Piperia elongata*	Chaparral orchid	N			X
Poaceae	*Aegilops triuncialis*	Barbed goat grass	I	High	X	X
	Agrostis exarata	Spike bent grass	N		X	X
	Aira caryophyllea	Silver hair grass	I		X	X
	Anthoxanthum odoratum	Sweet vernal grass	I	Moderate	X	X
	Avena barbata	Slender wild oat	I	Moderate	X	X
	Avena fatua	Wild oat	I	Moderate	X	
	Briza minor	Small quaking grass	I		X	X
	Bromus catharticus	Brome, chess	I		X	X
	Bromus diandrus	Ripgut grass	I	Moderate	X	X
	Bromus hordeaceus	Soft chess	I	Limited	X	X
	Bromus inermis	Smooth brome	I		X	
	Bromus madritensis ssp. *rubens*	Brome, chess	I			X
	Bromus tectorum	Cheat grass, downy chess	I	High	X	
	Crypsis schoenoides	Swamp prickle grass	I		X	X
	Cynodon dactylon	Bermuda grass	I	Moderate	X	X
	Cynosurus echinatus	Bristly dogtail grass	I	Moderate	X	X
	Dactylis glomerata	Orchard grass	I	Limited	X	
	Deschampsia danthonoides	Annual hair grass	N		X	X
	Elymus caput-medusae	Medusa head	I	High	X	X
	Elymus glaucus	Blue or western wild-rye	N		X	X
	Elymus multisetus	Big squirreltail	N		X	
	Elymus triticoides	Beardless wild rye	N			X
	Festuca bromoides	Brome fescue	I		X	X
	Festuca microstachys	Fescue, rye grass	N		X	
	Festuca myuros	Rattail sixweeks grass	I	Moderate	X	
	Festuca perennis	Rye grass	I	Moderate	X	X
	Gastridium phleoides	Nit grass	I		X	X
	Glyceria declinata	Low manna grass	I	Moderate	X	
	Glyceria x occidentalis	Western manna grass	I		X	
	Holcus lanatus	Common velvet grass	I	Moderate	X	X
	Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	I	Moderate	X	X
	Hordeum murinum ssp. *leporinum*	Hare barley	I	Moderate	X	X
	Melica californica	California melic	N		X	X
	Melica torreyana	Torrey's melic	N			X
	Paspalum distichum	Knot grass	N			X
	Phalaris aquatica	Harding grass	I	Moderate	X	X
	Poa sp.	Blue grass	--		X	
	Poa annua	Annual blue grass	I		X	X
	Poa bulbosa ssp. *vivipara*	Blue grass	I		X	X
	Poa pratensis ssp. *pratensis*	Kentucky blue grass	I	Limited		X
	Polypogon monspeliensis	Annual beard grass	I	Limited	X	X
	Stipa pulchra	Purple needle grass	N		X	
Potamogetonaceae	*Potamogeton* sp.	Pondweed	N		X	
Themidaceae	*Brodiaea elegans* ssp. *elegans*	Harvest brodiaea	N		X	X
	Dichelostemma capitatum ssp. *cap.*	Blue dicks	N		X	
	Dichelostemma multiflorum	Wild hyacinth	N		X	X
	Dichelostemma volubile	Twining brodiaea	N		X	X
	Triteleia hyacinthina	White brodiaea	N		X	
Typhaceae	*Typha latifolia*	Broad-leaved cattail	N		X	

[1] N = Native to CA; I = Introduced.

[2] Degree of negative ecological impact (Cal-IPC 2017).

[3] Sapling

[4] Specimen was collected and deposited at the UC Davis Herbarium

[5] *Monardella candicans* is a CNPS Rank 4.3 species.

Wildlife Species Observed.

COMMON NAME	SCIENTIFIC NAME
BIRDS	
Acorn woodpecker	*Melanerpes formicivorus*
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
California quail	*Callipepla californica*
California thrasher	*Toxostoma redivivum*
Eurasian collared dove	*Streptopelia decaocto*
Northern mockingbird	*Mimus polyglottos*
Red-winged blackbird	*Agelaius phoeniceus*
Turkey vulture	*Cathartes aura*
Western scrub-jay	*Aphelocoma californica*
Wild turkey	*Meleagris gallopavo*
Wrentit	*Chamaea fasciata*
MAMMALS	
Black-tailed jackrabbit	*Lepus californicus*
Mule deer	*Odocoileus hemionus*
Western gray squirrel	*Sciurus griseus*
REPTILES	
Western fence lizard	*Sceloporus occidentalis*

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APPENDIX D.

Photographs



Photo 1. View of the young ponderosa pine – disturbed community in the BSA that was graded for development over 25 years ago. This is one of the denser areas of young pines (13 June 2017).



Photo 2. View of a more barren area of the young ponderosa pine – disturbed community. The larger shrub in the foreground is Nissenan manzanita. The other smaller shrubs are the more common manzanita (13 June 2017).



Photo 3. A Nissenan manzanita (arrow) growing next to the more common manzanita. Nissenan manzanita tends to grow as a shorter, broader shrub (13 June 2017).



Photo 4. A close-up of the grayish-red, shredding bard of Nissenan manzanita. The more common manzanita has smooth red bark that peels cleanly as it grows (13 June 2017).



Photo 5. View of valley oak woodland from near the top of a hill in the north end of the BSA (13 June 2017).



Photo 6. View of Channel 2 in California black oak woodland in the south end of the BSA (27 June 2017).



Photo 7. View of sandbar willow scrub (17 September 2017).



Photo 8. View north of seasonal wetland 26, the low spot around the shovel (8 August 2017).



Photo 9. View north of the deepest part of the pond in the BSA. Most of the pond is outside of the BSA on adjacent property (13 September 2017).



Photo 10. View of an ephemeral channel in valley oak – interior live oak woodland (15 September 2017).

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APPENDIX E.

CNDDB Report for Nissenan manzanita

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code HUG17F0002
Quad code 3812067
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Arctostaphylos nissenana*

Common name: Nissenan manzanita

Date of field work (mm-dd-yyyy): 06-27-2017

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Charles Hughes

Affiliation: Sycamore Environmental

Address: Sycamore Environmental 6355 Riverside Blvd, Suite C, Sacramento, CA 95831

Email: chuck.hughes@sycamoreenv.com

Phone: (916) 427-0703

Other observers: Nicole Desideri

DETERMINATION

Keyed in: Jepson Manual, 2nd Edition

Compared w/ specimen at:

Compared w/ image in: Cal Photos

By another person:

Other: A. nissenana also reported from site by a 2009 botanical survey.

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort: Botanical survey consistent with CDFW 2009 Protocols.

Total number of individuals: 88

Collection? Yes **Collection number:** Hughes 472

Museum/Herbarium: UC Davis (Collection not delivered yet)

PLANT INFORMATION

Phenology:

90 %	1 %	9 %
vegetative	**flowering**	**fruiting**

SITE INFORMATION

Habitat description: Plants are growing primarily in an area that was graded for development more than 20 years ago but never built. Most of the woody plants sprouting in the graded area are Pinus ponderosa, Arctostaphylos viscida, Baccharis pilularis, and Arctostaphylos nissenana. A. nissenana at this site appears to prefer the areas areas that were graded down to near bedrock. Areas with deeper soil, or natural slopes, have few A. nissenana plants.

Slope: Near level

Land owner/manager: Private

Aspect:

Site condition + population viability: Fair

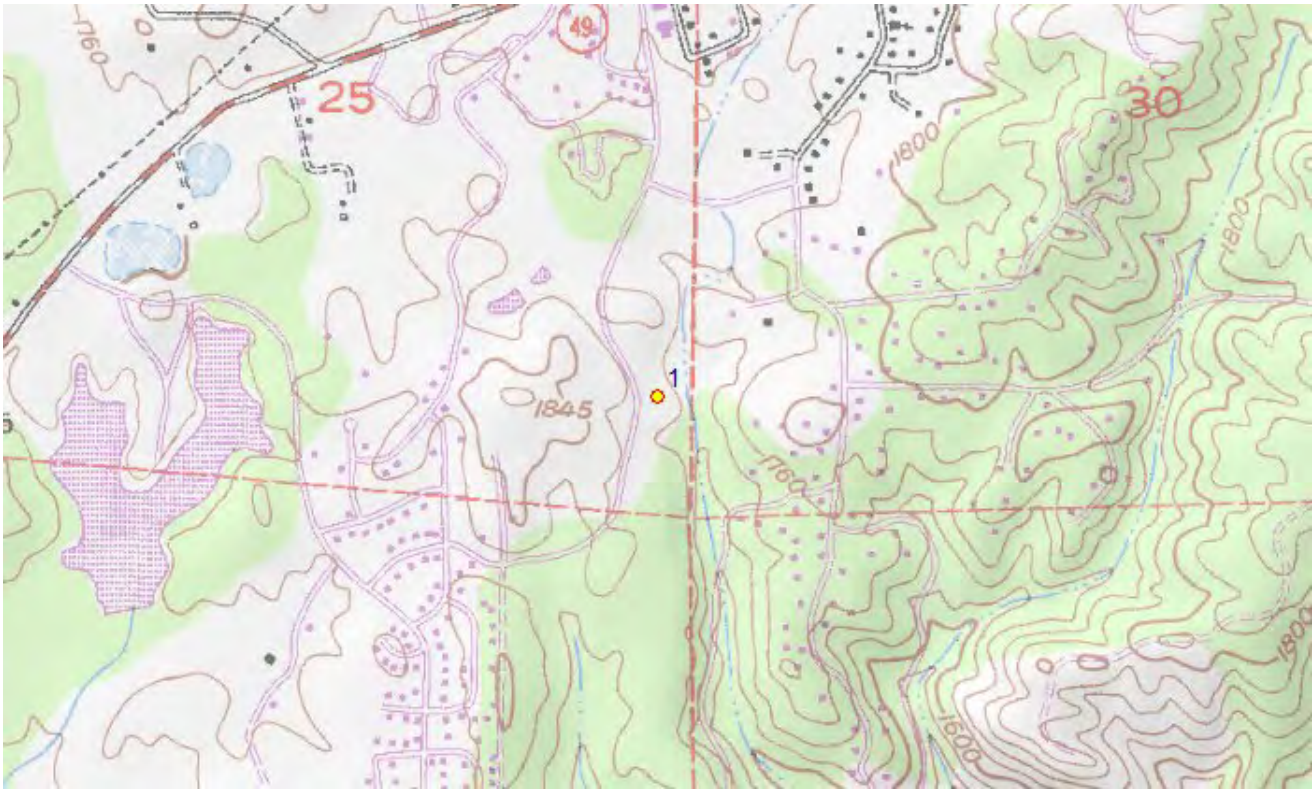
Immediate & surrounding land use: Mostly residential and commercial uses on the north, mostly natural oak woodland on the south.

Visible disturbances: The area where most of the A. nissenana is growing was graded over 20 years ago, and has thin remaining soil over rock. Currently, off-road vehicles continue to disturb the area but have little direct effect on established A. nissenana.

Threats: Development.

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	El Dorado	Placerville	-9999	38.68630	-120.81808	689777	4284226	10
1	**Public Land Survey**	**Feature Comment**						
	M T10N R10E 25							

The mapped feature is accurate within: 100 m

Source of mapped feature: Point placed manually based on separate map of GPS'd points

Mapping notes:

Location/directions comments:

Attachment(s): 17047StonehengeSprings_Fig6BotanicalResMap(11x17)_Shts1-2_v3.pdf, The attached map has more specific A. nissenana locations.

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Appendix D
Cultural Resources

ESA

Cultural Resources Appendices

NOTE TO REVIEWERS:

Cultural resources survey reports contain sensitive information concerning the locations of identified cultural and historic resources that are protected under federal and state law. For this reason, the cultural resources reports refered to in the Draft EIR are not available to the general public. Cultural resources professionals, tribal representatives, and other persons with a need-to-know concerning the specific details of project site's cultural resources should contact the following person for more information:

Tom Purciel, Associate Planner
2850 Fairlane Court
Placerville, CA 95667
Telephone: (530) 621-5355
dorado_oaks@edcgov.us

Appendix E
Geology & Soils

ESA

TECHNICAL MEMORANDUM

Date: September 27, 2018

To: El Dorado County

From: Brian Hammer

CC: Greg Stedfield

Subject: Dorado Oaks Drainage and Storm Water Quality Technical Memo for Tentative Map

---

Introduction

This Technical Memorandum (TM) is a technical drainage assessment for the Dorado Oaks proposed development and provides a tentative map level of analysis for the proposed storm drainage infrastructure and storm water quality facilities.

The contributary area analyzed herein is comprised of approximately 501 acres of which approximately 70 acres are developed with the remainder consisting of off-site and on-site contributory areas not developed for this project. See Appendix A for existing and developed watershed Maps.

The purpose of this technical memo is to:

- Present technical storm drainage and stormwater quality calculations for the proposed project development.
- Conclude that the proposed infrastructure is sufficient to serve the planned development.

The data, modeling, and exhibits herein are based upon the NGVD 29 datum. No previous studies were utilized in the preparation of this report.

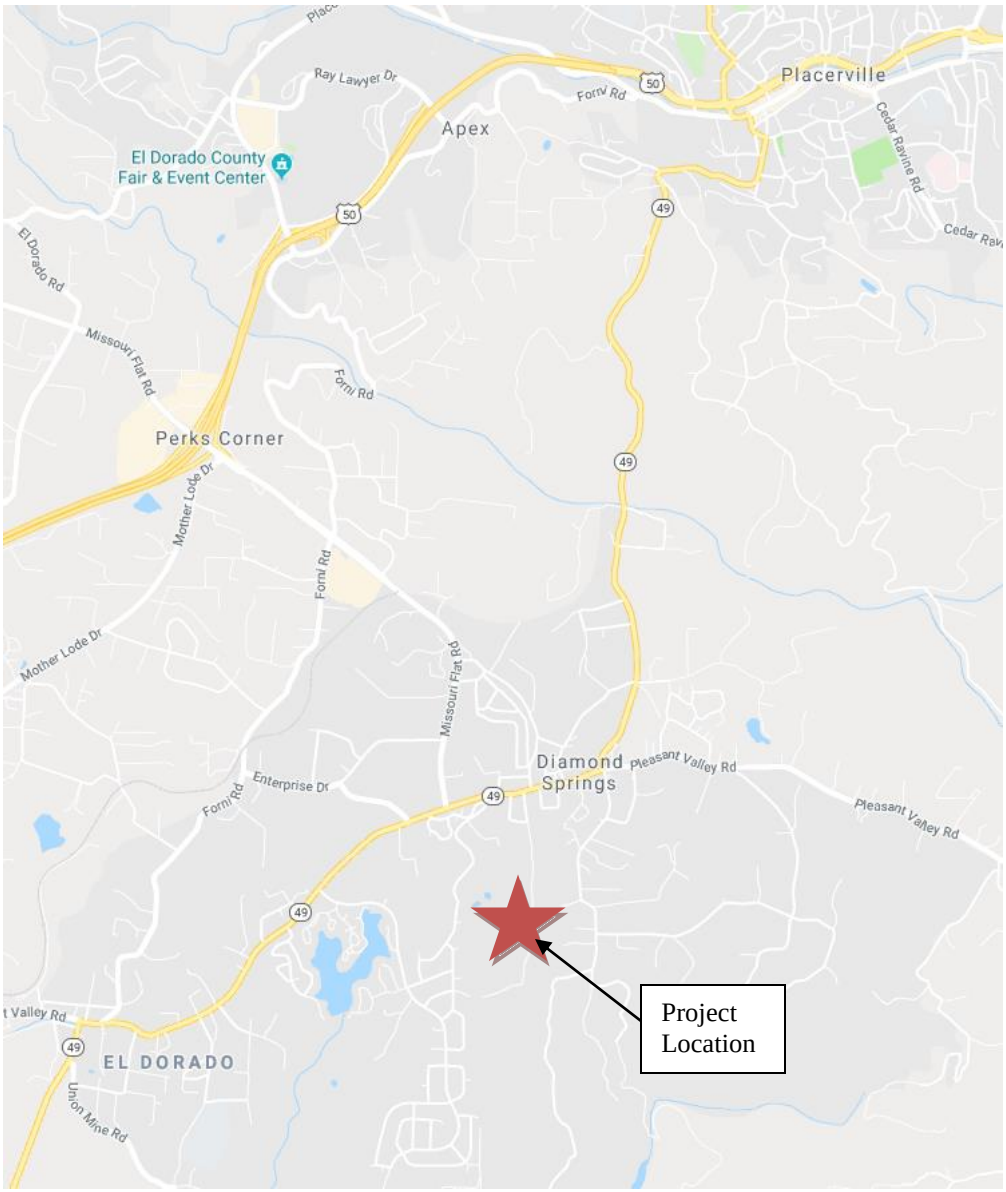


Figure 1. Project Location

Model Assumptions and Design Criteria

HEC-HMS was used to calculate runoff and to perform hydraulic calculations. The site discharges primarily to the south and east of the project with two smalls watersheds discharging to the West. There are two ridgelines in the project which results in a drainage path to the center of the project which continues south and a drainage path to the west of the project. There are five points of compliance for the project which can be seen on Figure 2. The path to the center and south is considered a single location in which the developed flow will be compared to the existing flows. The west slope of the project drains to compliance point 1 and 2. Compliance point 2 does not collect to a single point at the property line and therefore the flows leaving the site will be summed up and compared against the developed flows leaving the site to the west.

Due to the slope of the watershed it is assumed there will be no backwater condition placed on the swale outfalls.

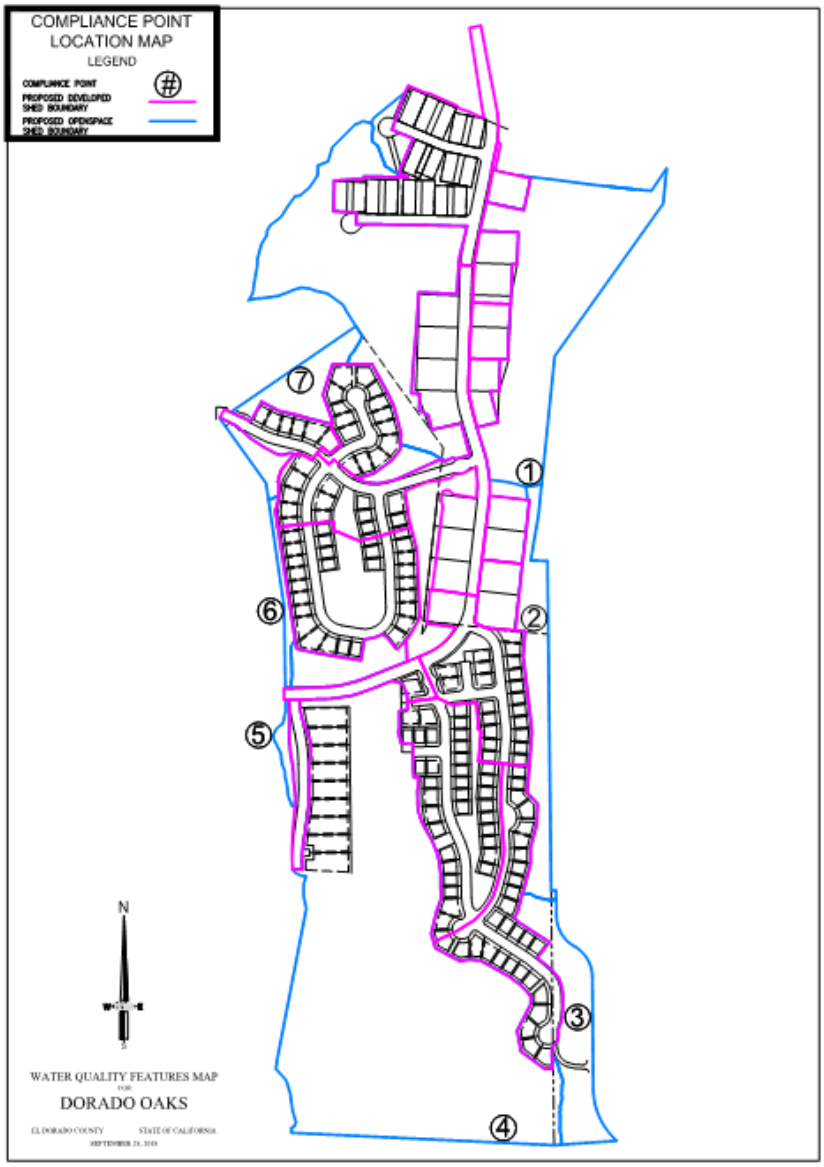


Figure 2. Compliance Point Locations

The hydrologic input and criteria used for the development of this study are summarized below:

- The site consists of USGS Soil Type C Soils (See Figure 3 Below).
- The percent impervious rates used are as follows:
  - Roadway: 95%
  - Single Family Lots:
  - T-Court Lots:
  - Apartments or Condominiums:
  - Open Space or Existing: 2%

The hydraulic input and criteria used for the development of this study are summarized below:

- The following Manning's 'n' values were used:

  - Pipes 0.015
  - Gutters 0.015
  - Asphalt Street Section 0.019
- Minimum pipe velocity of 2.0fps
- Minimum pipe diameter of 12”
- Data was input with information matching the tentative map grading plans.
- The 10-year hydraulic grade line shall stay at a minimum 1-foot below all manhole rims and inlet grates.
- The 100-year event shall be greater than 1 foot below adjacent finished pad elevations.
- 10-year and 100-year mitigation will be achieved for the development.
- Water Quality Swales and Basins will mitigate for the development impacts. No LID is assumed in the sizing of these facilities. If LID is proposed in the improvement plans these water quality features can be reduced in size.

Exhibit 1 displays the sheds, proposed pipe system, and pertinent results. The hydrologic data and parameters that were used to develop the runoff are included in Appendix A.

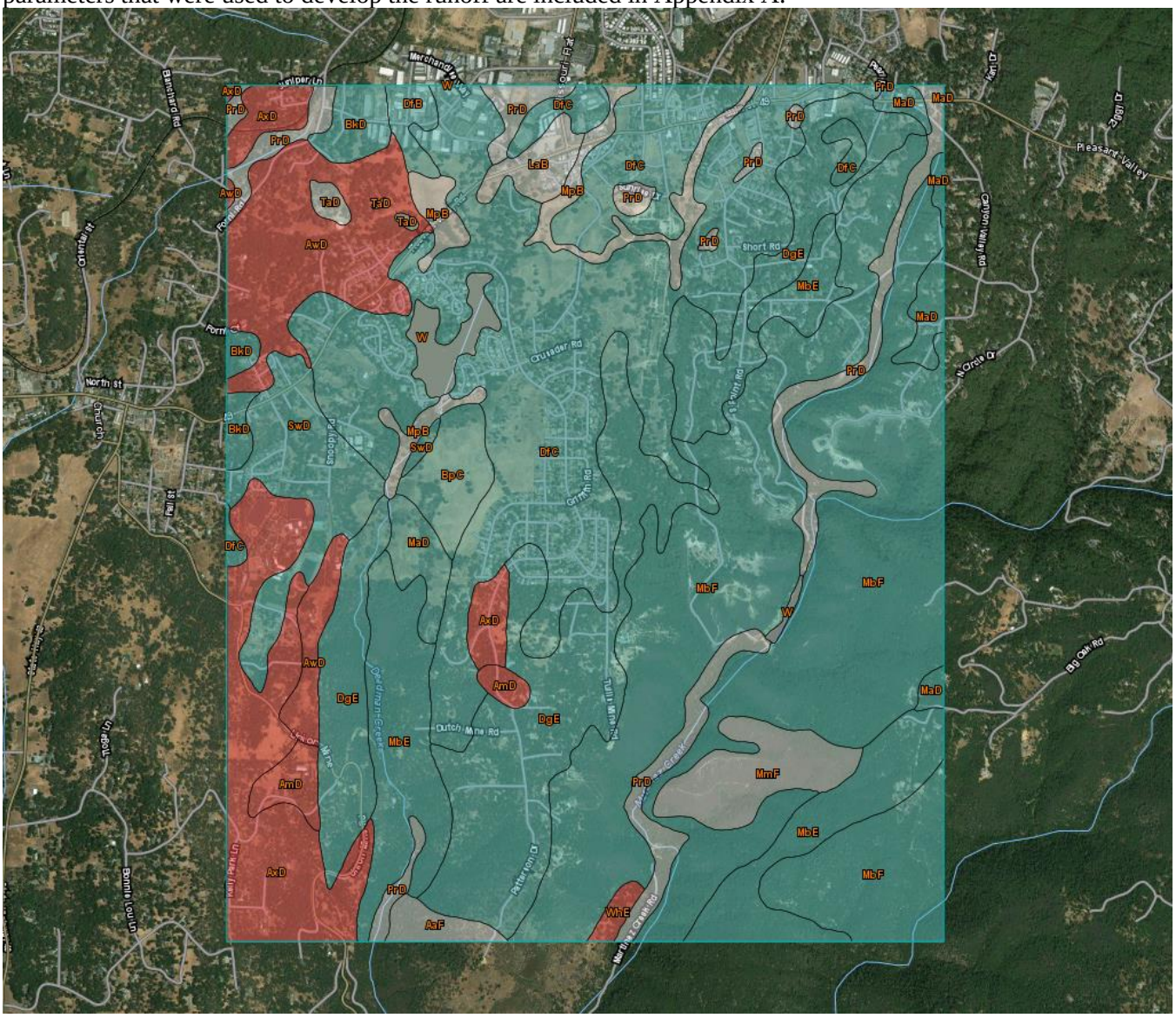


Figure 3. USGS Soil Map (Type C Soils)

10-Year Analysis and Results

The 10-year event for existing and proposed conditions was analyzed in HEC-HMS. Table 1 shows the resultant peak flows at each compliance point and the difference in flow leaving the site. The complete data and results are attached as Appendix B.

Table 1. 10-Year Peak Flows

Point of Compliance	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1	347	330	-17
2	17	13.7	-3.3
3	48	16	-32
4	87	87	0
5	4.4	12.4	8
6	19	13.6	-5.4
Total	522.4	472.7	-49.7

100-Year Analysis and Results

The 100-year event for existing and proposed conditions was analyzed in HEC-HMS. Table 2 shows the resultant peak flows at each compliance point and the difference in flow leaving the site. The complete data and results are attached as Appendix C.

Table 2. 100-Year Peak Flows

Point of Compliance	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1	575	546	-29
2	28	21.9	-6.1
3	77.6	26	-51.6
4	141	142	1
5	7	20.9	13.9
6	19	20.7	1.7
Total	847.6	777.5	-70.1

Storm Water Quality and Hydromodification

The Dorado Oaks proposed development projects create more than one acre of impervious surface. Due to this, it is required to provide storm water treatment for the 85th percentile event.

The first line of defense in maintaining storm water quality is to keep polluted water from commingling with clean water through the use of Source Controls. This can be done using structural and operational measures at the pollutant source. At this time in the development process source control measures are not yet implemented. It is anticipated that source control measures will be proposed for the apartment and T-lot development products. For the tentative map design, it is assumed no source control is proposed to show the largest size of water quality features.

Additionally, several Low Impact Development strategies are anticipated to reduce the post-development flows. These strategies remove pollutants from runoff, attenuate peak flows, and reduce runoff volume. The proposed LID measures include tree planting, disconnected impervious areas, bioretention facilities, and a vegetated swale. Similar to source controls, the LID features anticipated to be installed were not assumed to provide water quality or hydromodification reductions. This results in the greatest sized

facilities for purposes of land allocation. These facilities can be reduced at the improvement plan level analysis when LID feature locations and quantities are finalized.

No LID measures are proposed for off-site areas that contribute to the project's outfall nor for the interim graded pervious areas (future roadway).

The swale was sized to treat the entire stormwater quality flow without accounting for the tree planting, disconnected impervious areas, and bioretention facilities. Appendix D contains the calculations for sizing of the water quality swales which will adequately treat the development.

Conclusion

The results of the analysis performed for this Technical Memorandum demonstrate that the proposed improvements can be satisfactorily treated and conveyed within the proposed drainage facilities without damage to structures or downstream receiving waters. Further detail on the storm drain system, swale grading, final basin grading, and culverts will be provided with the improvement plan submittal.

Appendix A

EXISTING SHED MAP

LEGEND

EXISTING SHED BOUNDARY



N

W E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

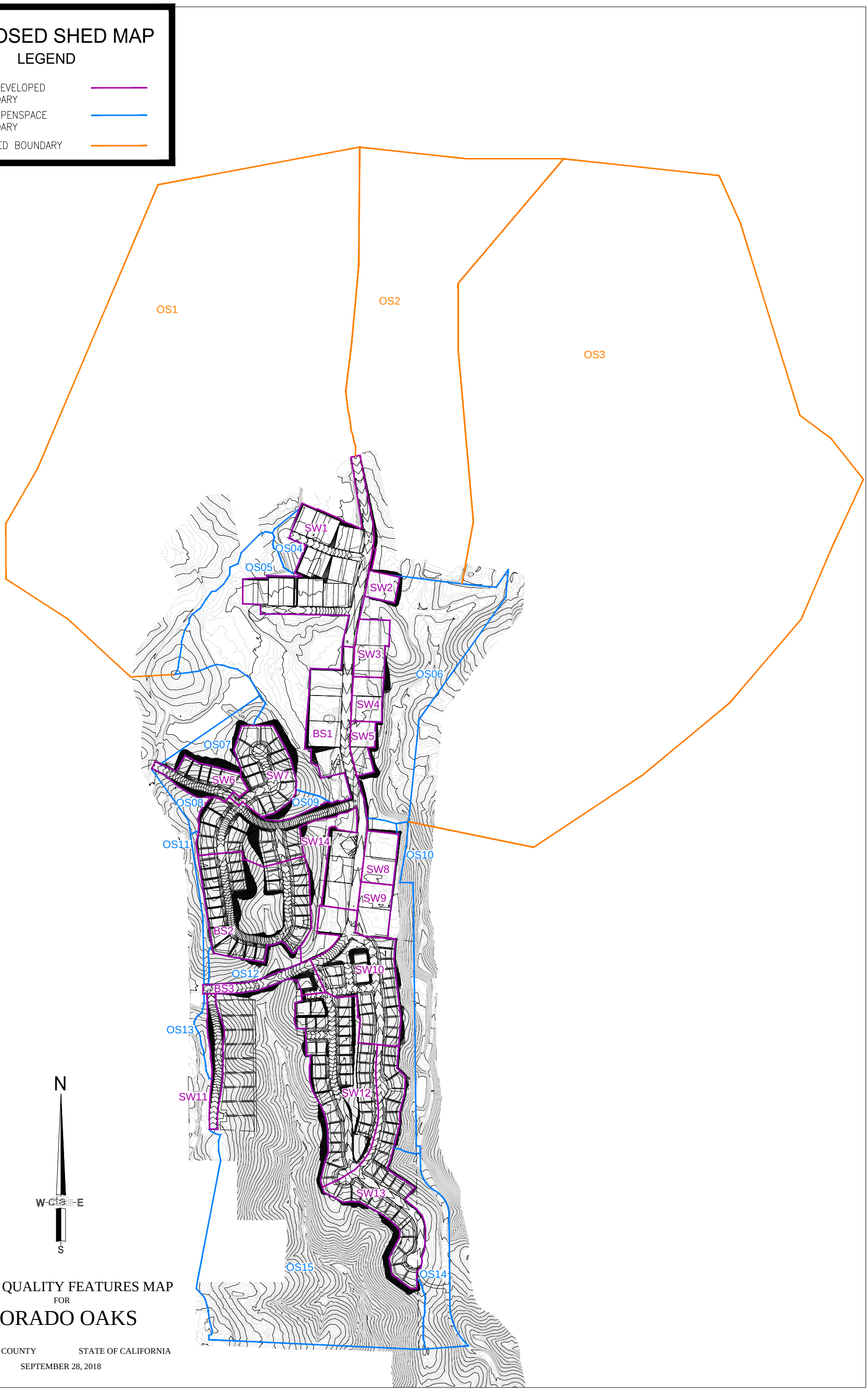
PROPOSED SHED MAP

LEGEND

PROPOSED DEVELOPED SHED BOUNDARY

PROPOSED OPENSPACE SHED BOUNDARY

EXISTING SHED BOUNDARY



WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

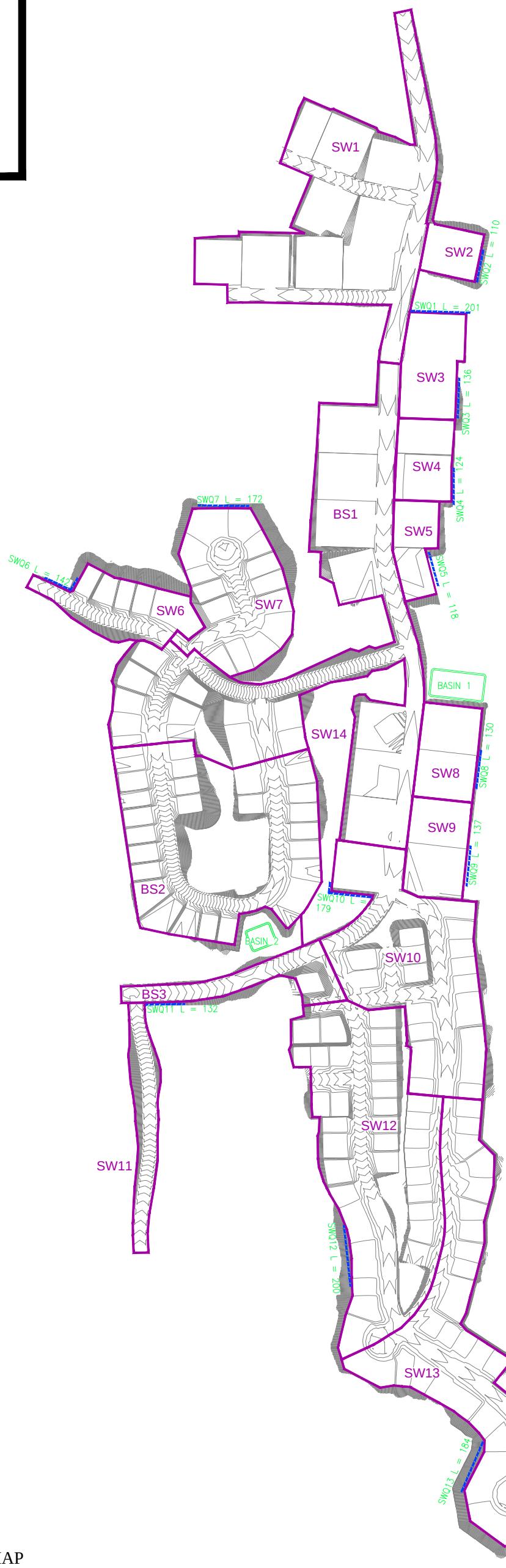
PROPOSED DRAINAGE FEATURES MAP

LEGEND

STORMWATER QUALITY SWALE

DETENTION BASIN

PROPOSED DEVELOPED SHED BOUNDARY



N

W-C-E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

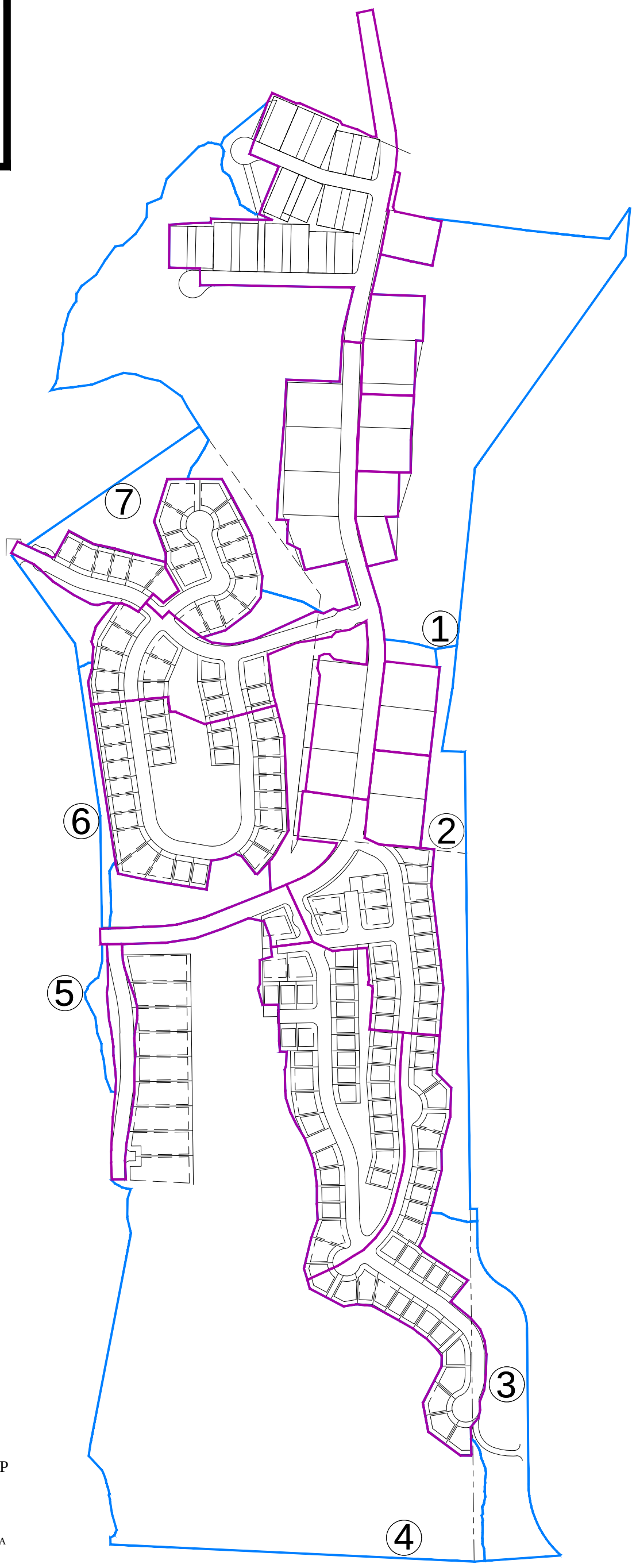
COMPLIANCE POINT LOCATION MAP

LEGEND

COMPLIANCE POINT #

PROPOSED DEVELOPED SHED BOUNDARY

PROPOSED OPENSPACE SHED BOUNDARY



N

W E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

Appendix B

Sub-basin data : Existing

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		0.0		0.2817	0.0%
OS5			81	350513	8.0		0.0		0.0126	0.0%
OS6			81	721847	16.6		0.0		0.025893	0.0%
OS4			81	1229244	28.2		0.0		0.0441	0.0%
OS7			81	338677	7.8		0.0		0.0121	0.0%
OS8			81	766594	17.6		0.0		0.0275	0.0%
OS9			81	96217	2.2		0.0		0.0035	0.0%
OS11			81	353742	8.1		0.0		0.0127	0.0%
OS12.1			81	208267	4.8		0.0		0.0075	0.0%
OS12.2			81	106354	2.4		0.0		0.0038	0.0%
OS10			81	3129774	71.8		0.0		0.1123	0.0%

2) Lag Time : Existing

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS5	1784	1764	300	0.067	14	1764	1748	539	0.030	2.78	3.2	1748.0	1747.0	1	1.0000	10.0	0.0	17.58	**10.6**
OS6	1810	1800	300	0.033	13	1800	1734	1210	0.055	3.77	5.4	1734.0	1698.0	1513	0.0238	2.8	9.1	27.44	**16.5**
OS4	1769	1759	300	0.033	13	1759	1744	838	0.018	2.16	6.5	1744.0	1743.0	1	1.0000	10.0	0.0	19.48	**11.7**
OS7	1805	1784	100	0.210	3	1784	1766	336	0.054	3.73	1.5	1766.0	1765.0	1	1.0000	10.0	0.0	4.09	**2.5**
OS8	1774	1749	166	0.151	4	1749	1746	273	0.011	1.69	2.7	1746.0	1738.0	723	0.0111	1.9	6.4	13.49	**8.1**
OS9	1836	1809	232	0.116	6	1809	1808	1	1.000	16.13	0.0	1808.0	1807.0	1	1.0000	10.0	0.0	6.42	**3.9**
OS11	1754	1691	239	0.264	5	1691	1690	1	1.000	16.13	0.0	1690.0	1689.0	1	1.0000	10.0	0.0	4.74	**2.8**
OS12.1	1740	1720	279	0.072	9	1720	1686	584	0.058	3.89	2.5	1686.0	1685.0	1	1.0000	10.0	0.0	11.54	**6.9**
OS12.2	1740	1714	300	0.087	9	1714	1676	389	0.098	5.04	1.3	1676.0	1675.0	1	1.0000	10.0	0.0	10.16	**6.1**
OS10	1836	1791	300	0.150	7	1791	1751	494	0.081	4.59	1.8	1751.0	1622.0	2881	0.0448	3.8	12.6	21.52	**12.9**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)
Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max
Channel flow based on Manning's equation
Lag time = total travel time x 0.6

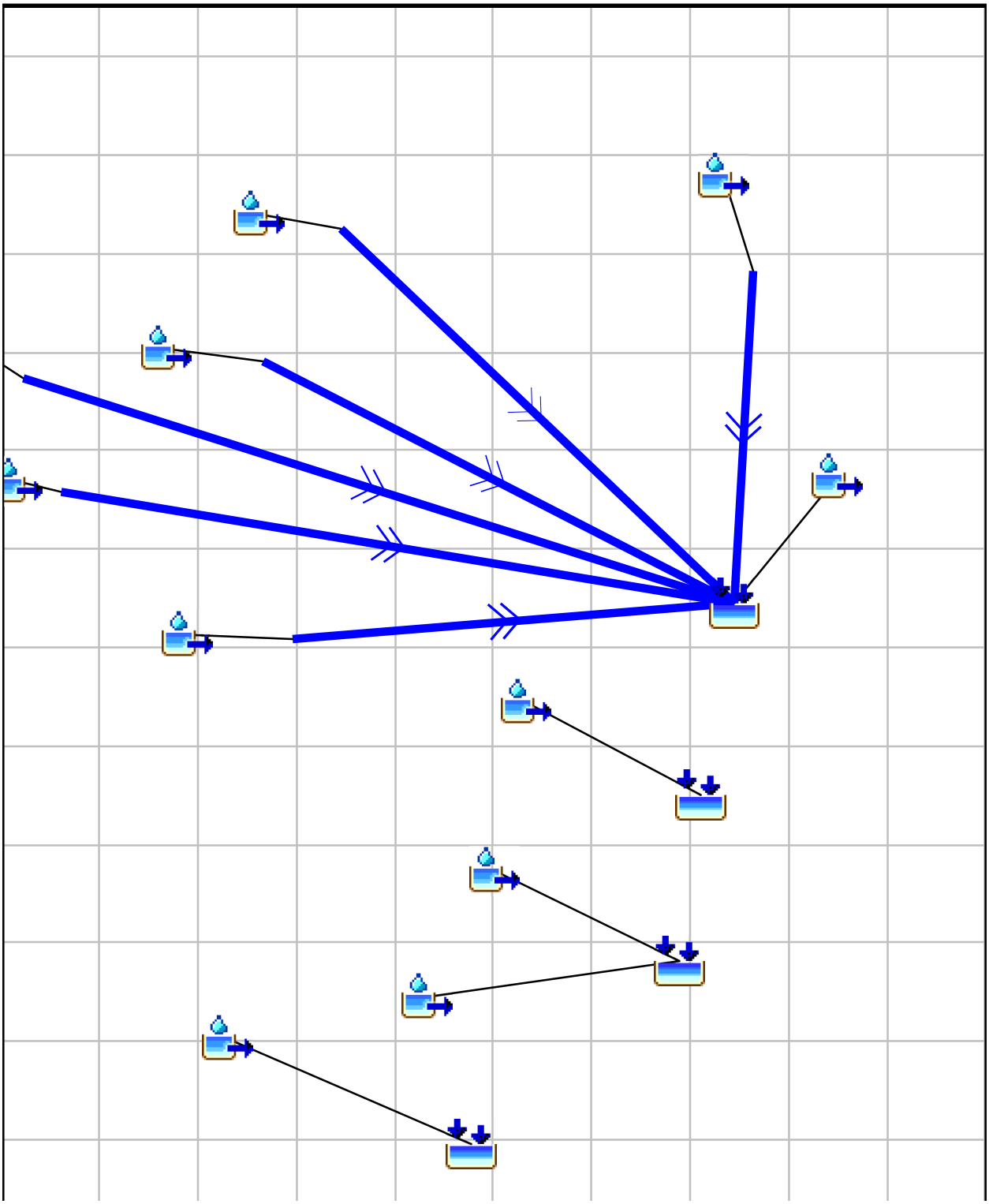
3) Loss RatePer SCS Method (now NRCS)
SOIL TYPES C throughout the watershed
SCS CURVE NUMBER(average moisture C Soil)=81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Ex

Sep 28 13:13:54 PDT 2018



Project: Dorado Oaks Simulation Run: Dorado Oaks 10yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Ex
End of Run: 02Jan2007, 00:00 Meteorologic Model: 10 YR-24IN
Compute Time: 28Sep2018, 13:11:49 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
OS3	0.2817	155.6	01Jan2007, 12:28	3.05
ROS3-1	0.2817	155.3	01Jan2007, 12:36	3.03
OS1	0.1690	99.6	01Jan2007, 12:24	3.06
ROS1-1	0.1690	99.2	01Jan2007, 12:37	3.03
OS2	0.0700	45.1	01Jan2007, 12:20	3.06
ROS2-1	0.0700	44.9	01Jan2007, 12:39	3.02
DOE03	0.0440	35.5	01Jan2007, 12:13	3.08
RDOE3-1	0.0440	35.1	01Jan2007, 12:20	3.06
DOE05	0.0275	29.6	01Jan2007, 12:09	3.51
RDOE5-1	0.0275	29.1	01Jan2007, 12:17	3.49
DOE02	0.0260	18.3	01Jan2007, 12:18	3.14
DOE01	0.0130	11.0	01Jan2007, 12:12	3.08
RDOE1-1	0.0130	10.8	01Jan2007, 12:28	3.05
CP1	0.6312	347.4	01Jan2007, 12:35	3.06
DOE10	0.1123	86.6	01Jan2007, 12:14	3.08
CP4	0.1123	86.6	01Jan2007, 12:14	3.08
DOE09	0.0380	40.7	01Jan2007, 12:07	3.09
DOE08	0.0075	7.6	01Jan2007, 12:08	3.09
CP3	0.0455	48.2	01Jan2007, 12:07	3.09
DOE07	0.0127	17.2	01Jan2007, 12:04	3.09
CP2	0.0127	17.2	01Jan2007, 12:04	3.09
DOE04	0.0121	18.5	01Jan2007, 12:04	3.45
CP6	0.0121	18.5	01Jan2007, 12:04	3.45
DOE06	0.0035	4.4	01Jan2007, 12:05	3.09
CP5	0.0035	4.4	01Jan2007, 12:05	3.09

Sub-basin data: Developed

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		18903.7		0.2817	0.2%
OS4			81	41245	0.9		10311.3		0.0015	25.0%
OS5			81	679099	15.6		0.0		0.0244	0.0%
OS6			81	642044	14.7		0.0		0.0230	0.0%
OS7			81	106844	2.5		0.0		0.0038	0.0%
OS8			81	40018	0.9		0.0		0.0014	0.0%
OS9			81	33056	0.8		0.0		0.0012	0.0%
OS10			81	209691	4.8		0.0		0.0075	0.0%
OS11			81	30937	0.7		0.0		0.0011	0.0%
OS12			81	89975	2.1		0.0		0.0032	0.0%
OS13			81	23113	0.5		0.0		0.0008	0.0%
OS14			81	221209	5.1		0.0		0.0079	0.0%
OS15			81	1929450	44.3		0.0		0.0692	0.0%
SW1			90	395421	9.1		316336.8		0.0142	80.0%
SW2			90	34536	0.8		24175.2		0.0012	70.0%
SW3			90	71520	1.6		50064.0		0.0026	70.0%
SW4			90	54101	1.2		37870.7		0.0019	70.0%
SW5			90	44205	1.0		30943.5		0.0016	70.0%
SW6			86	88059	2.0		44029.5		0.0032	50.0%
SW7			86	167017	3.8		83508.5		0.0060	50.0%
SW8			90	65418	1.5		45792.6		0.0023	70.0%
SW9			90	68930	1.6		48251.0		0.0025	70.0%
SW10			86	292446	6.7		146223.0		0.0105	50.0%
SW11			95	60668	1.4		57634.6		0.0022	95.0%
SW12			86	403007	9.3		201503.5		0.0145	50.0%
SW13			86	309449	7.1		154724.5		0.0111	50.0%
BS1			90	556046	12.8		389232.2		0.0199	70.0%
BS2			86	386025	8.9		193012.5		0.0138	50.0%
BS3			90	64049	1.5		57644.1		0.0023	90.0%
SW14			81	122297	2.8		0.0		0.0044	0.0%

2) Lag Time : Developed

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS4	1780	1768	100	0.120	5	1768	1768	0			0.0	1768.0	1768.0	0			-	4.71	**2.8**
OS5	1822	1790	300	0.107	12	1790	1770	500	0.040	3.23	2.6	1770.0	1754.0	510	0.0314	7.4	1.2	15.63	**9.4**
OS6	1754	1720	300	0.113	12	1720	1710	300	0.033	2.95	1.7	1710.0	1700.0	940	0.0106	4.3	3.7	16.96	**10.2**
OS7	1785	1760	200	0.125	8	1760	1740	87	0.230	7.74	0.2	1740.0	1740.0	0	0.0000	0.0	-	8.26	**5.0**
OS8	1810	1790	200	0.100	9	1790	1790	0	0.000	0.00	0.0	1790.0	1790.0	0	0.0000	0.0	-	8.82	**5.3**
OS9	1800	1776	100	0.240	4	1776	1760	270	0.059	3.93	1.1	1760.0	1760.0	0	0.0000	0.0	-	4.72	**2.8**
OS10	1750	1710	161	0.248	5	1710	1710	0	0.000	0.00	0.0	1710.0	1710.0	0	0.0000	0.0	-	5.16	**3.1**
OS11	1815	1805	30	0.333	1	1805	1800	0	0.000	0.00	0.0	1800.0	1800.0	0	0.0000	0.0	-	1.20	**0.7**
OS12	1761	1748	300	0.043	17	1748	1738	152	0.066	4.14	0.6	1738.0	1738.0	0	0.0000	0.0	-	17.67	**10.6**
OS13	1790	1775	95	0.158	4	1775	1775	0	0.000	0.00	0.0	1775.0	1775.0	0	0.0000	0.0	-	4.05	**2.4**
OS14	1734	1714	157	0.127	7	1714	1714	0	0.000	0.00	0.0	1714.0	1714.0	0	0.0000	0.0	-	6.60	**4.0**
OS15	1760	1732	300	0.093	13	1732	1732	0	0.000	0.00	0.0	1732.0	1624.0	2315	0.0467	9.0	4.3	16.85	**10.1**
SW1	1768	1767	100	0.010	13	1767	1754	950	0.014	1.89	8.4	1754.0	1754.0	0	0.0000	0.0	-	21.12	**12.7**
SW2	1755	1754	100	0.010	13	1754	1753	88	0.011	1.72	0.9	1753.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW3	1754	1753	100	0.010	13	1753	1752	88	0.011	1.72	0.9	1752.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW4	1752	1751	100	0.010	13	1751	1750	90	0.011	1.70	0.9	1750.0	1750.0	0	0.0000	0.0	-	13.61	**8.2**
SW5	1750	1749	100	0.010	13	1749	1748	88	0.011	1.72	0.9	1748.0	1748.0	0	0.0000	0.0	-	13.58	**8.2**
SW6	1805	1804	87	0.011	11	1804	1780	500	0.048	3.53	2.4	1780.0	1780.0	0	0.0000	0.0	-	13.13	**7.9**
SW7	1803	1802	100	0.010	13	1802	1789	590	0.022	2.39	4.1	1789.0	1789.0	0	0.0000	0.0	-	16.84	**10.1**
SW8	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW9	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW10	1755	1754	100	0.010	13	1754	1744	836	0.012	1.76	7.9	1744.0	1744.0	0	0.0000	0.0	-	20.63	**12.4**
SW11	1798	1797	24	0.042	2	1797	1761	847	0.043	3.33	4.2	1761.0	1761.0	0	0.0000	0.0	-	6.54	**3.9**
SW12	1755	1754	100	0.010	13	1754	1750	130	0.031	2.83	0.8	1750.0	1734.0	1000	0.0160	5.3	3.2	16.67	**10.0**
SW13	1753	1752	100	0.010	13	1752	1746	400	0.015	1.98	3.4	1746.0	1734.0	1200	0.0100	4.2	4.8	20.92	**12.6**
BS1	1754	1753	100	0.010	13	1753	1742	994	0.011	1.70	9.8	1742.0	1768.0	0	0.0000	0.0	-	22.49	**13.5**
BS2	1817	1816	100	0.010	13	1816	1768	710	0.068	4.20	2.8	1768.0	1768.0	0	0.0000	0.0	-	15.55	**9.3**
BS3	1762	1761	10	0.100	1	1761	1748	417	0.031	2.85	2.4	1748.0	1748.0	0	0.0000	0.0	-	3.24	**1.9**
SW14	1779	1757	100	0.220	4	1757	1749	720	0.011	1.70	7.1	1749.0	1749.0	0	0.0000	0.0	-	10.75	**6.5**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Loss RatePer SCS Method (now NRCS)

SOIL TYPES C throughout the watershed

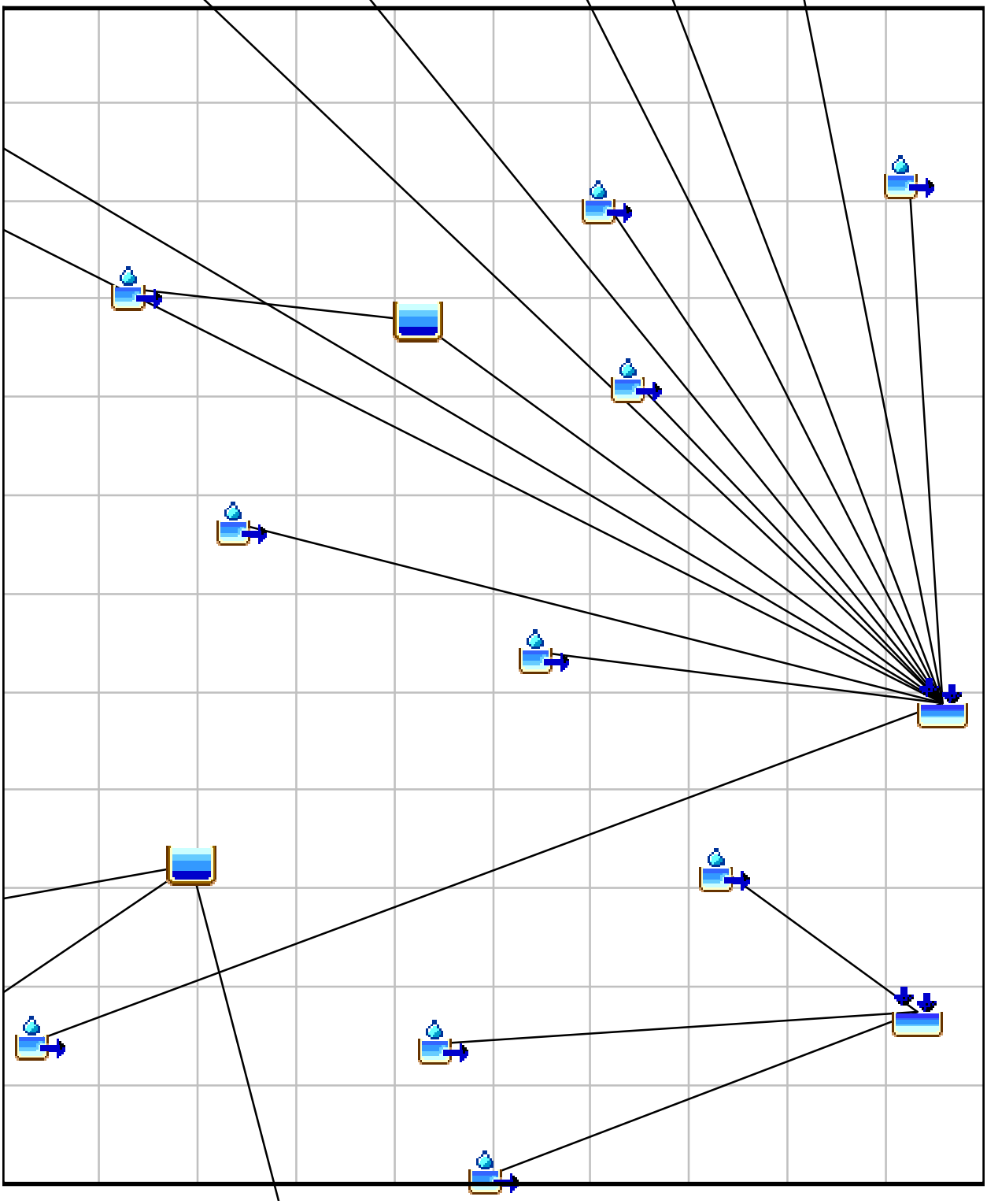
SCS CURVE NUMBER(average moisture C Soil)= 81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Dev

Sep 28 13:20:09 PDT 2018



Project: Dorado Oaks Simulation Run: DO Dev 10yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Dev
End of Run: 02Jan2007, 00:00 Meteorologic Model: 10 YR-24IN
Compute Time: 28Sep2018, 13:24:10 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.2817	155.7	01Jan2007, 12:28	45.9
OS01	0.169	90.0	01Jan2007, 12:30	27.5
OS02	0.07	41.4	01Jan2007, 12:21	9.9
OS04	0.0244	33.9	01Jan2007, 12:04	4.1
OS05	0.0244	21.7	01Jan2007, 12:10	4.0
OS06	0.023	19.7	01Jan2007, 12:11	3.8
BS01	0.0199	19.5	01Jan2007, 12:14	4.6
DB01	0.0199	7.1	01Jan2007, 12:40	4.5
SW01	0.0142	14.5	01Jan2007, 12:14	3.4
SW14	0.0044	3.1	01Jan2007, 12:15	0.6
SW03	0.0026	3.2	01Jan2007, 12:09	0.6
SW04	0.0019	2.3	01Jan2007, 12:09	0.4
SW05	0.0016	2.0	01Jan2007, 12:09	0.4
SW02	0.0012	1.5	01Jan2007, 12:09	0.3
OS09	0.0012	1.5	01Jan2007, 12:04	0.2
CP1	0.6395	330.4	01Jan2007, 12:24	105.4
OS15	0.0692	54.8	01Jan2007, 12:11	9.8
BS02	0.0138	14.9	01Jan2007, 12:10	2.9
BS03	0.0023	2.9	01Jan2007, 12:09	0.6
DB02	0.0161	3.8	01Jan2007, 12:55	3.1
SW12	0.0145	15.1	01Jan2007, 12:11	3.0
SW10	0.0105	9.9	01Jan2007, 12:13	2.2
OS12	0.0032	2.5	01Jan2007, 12:12	0.5
SW11	0.0022	3.7	01Jan2007, 12:05	0.5
CP4	0.1157	86.8	01Jan2007, 12:11	19.1
SW13	0.0111	10.4	01Jan2007, 12:14	2.3
OS14	0.0079	9.0	01Jan2007, 12:05	1.1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP3	0.0190	16.0	01Jan2007, 12:06	3.4
SW07	0.006	6.3	01Jan2007, 12:11	1.3
OS07	0.0038	4.4	01Jan2007, 12:06	0.6
SW06	0.0032	3.8	01Jan2007, 12:09	0.7
CP6	0.0130	13.6	01Jan2007, 12:08	2.6
OS10	0.0075	9.1	01Jan2007, 12:04	1.1
SW09	0.0025	3.1	01Jan2007, 12:09	0.6
SW08	0.0023	2.8	01Jan2007, 12:09	0.5
CP2	0.0123	13.7	01Jan2007, 12:05	2.2
OS13	0.008	10.3	01Jan2007, 12:04	1.1
OS08	0.0014	1.3	01Jan2007, 12:10	0.2
OS11	0.0011	1.5	01Jan2007, 12:03	0.2
CP5	0.0105	12.4	01Jan2007, 12:03	1.5

Appendix C

Sub-basin data : Existing

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		0.0		0.2817	0.0%
OS5			81	350513	8.0		0.0		0.0126	0.0%
OS6			81	721847	16.6		0.0		0.025893	0.0%
OS4			81	1229244	28.2		0.0		0.0441	0.0%
OS7			81	338677	7.8		0.0		0.0121	0.0%
OS8			81	766594	17.6		0.0		0.0275	0.0%
OS9			81	96217	2.2		0.0		0.0035	0.0%
OS11			81	353742	8.1		0.0		0.0127	0.0%
OS12.1			81	208267	4.8		0.0		0.0075	0.0%
OS12.2			81	106354	2.4		0.0		0.0038	0.0%
OS10			81	3129774	71.8		0.0		0.1123	0.0%

2) Lag Time : Existing

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS5	1784	1764	300	0.067	14	1764	1748	539	0.030	2.78	3.2	1748.0	1747.0	1	1.0000	10.0	0.0	17.58	**10.6**
OS6	1810	1800	300	0.033	13	1800	1734	1210	0.055	3.77	5.4	1734.0	1698.0	1513	0.0238	2.8	9.1	27.44	**16.5**
OS4	1769	1759	300	0.033	13	1759	1744	838	0.018	2.16	6.5	1744.0	1743.0	1	1.0000	10.0	0.0	19.48	**11.7**
OS7	1805	1784	100	0.210	3	1784	1766	336	0.054	3.73	1.5	1766.0	1765.0	1	1.0000	10.0	0.0	4.09	**2.5**
OS8	1774	1749	166	0.151	4	1749	1746	273	0.011	1.69	2.7	1746.0	1738.0	723	0.0111	1.9	6.4	13.49	**8.1**
OS9	1836	1809	232	0.116	6	1809	1808	1	1.000	16.13	0.0	1808.0	1807.0	1	1.0000	10.0	0.0	6.42	**3.9**
OS11	1754	1691	239	0.264	5	1691	1690	1	1.000	16.13	0.0	1690.0	1689.0	1	1.0000	10.0	0.0	4.74	**2.8**
OS12.1	1740	1720	279	0.072	9	1720	1686	584	0.058	3.89	2.5	1686.0	1685.0	1	1.0000	10.0	0.0	11.54	**6.9**
OS12.2	1740	1714	300	0.087	9	1714	1676	389	0.098	5.04	1.3	1676.0	1675.0	1	1.0000	10.0	0.0	10.16	**6.1**
OS10	1836	1791	300	0.150	7	1791	1751	494	0.081	4.59	1.8	1751.0	1622.0	2881	0.0448	3.8	12.6	21.52	**12.9**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)
Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max
Channel flow based on Manning's equation
Lag time = total travel time x 0.6

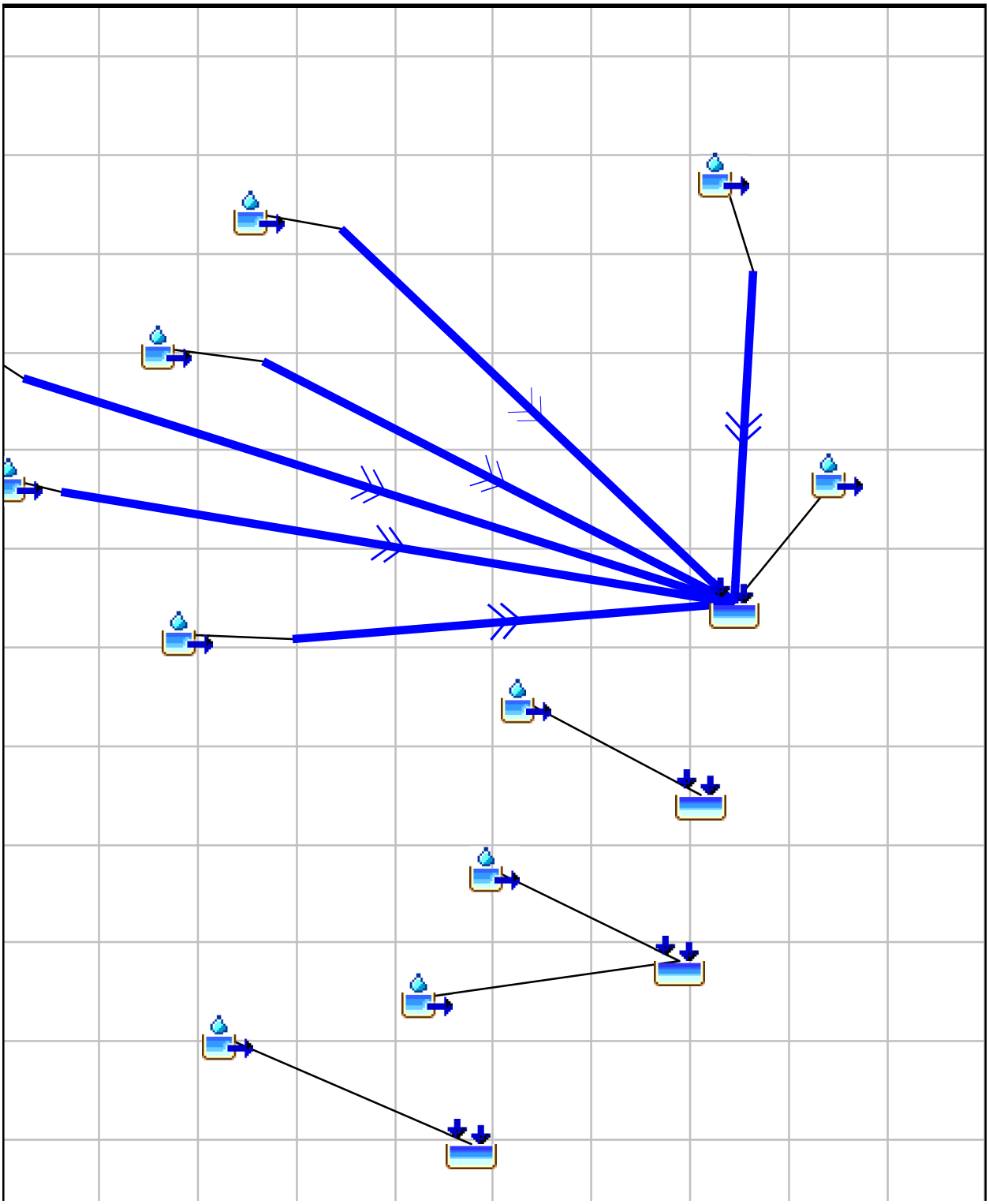
3) Loss RatePer SCS Method (now NRCS)
SOIL TYPES C throughout the watershed
SCS CURVE NUMBER(average moisture C Soil)=81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Ex

Sep 28 13:13:54 PDT 2018



Project: Dorado Oaks Simulation Run: Dorado Oaks 100-yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Ex
End of Run: 02Jan2007, 00:00 Meteorologic Model: 100 YR-24IN
Compute Time: 28Sep2018, 13:11:26 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS3	0.2817	256.6	01Jan2007, 12:28	77.0
ROS3-1	0.2817	256.2	01Jan2007, 12:35	76.6
OS1	0.169	163.7	01Jan2007, 12:24	46.3
ROS1-1	0.169	163.2	01Jan2007, 12:36	45.9
OS2	0.070	73.8	01Jan2007, 12:20	19.2
ROS2-1	0.070	73.5	01Jan2007, 12:37	19.0
DOE03	0.044	57.4	01Jan2007, 12:13	12.1
RDOE3-1	0.044	57.0	01Jan2007, 12:19	12.1
DOE05	0.0275	45.8	01Jan2007, 12:09	8.4
RDOE5-1	0.0275	45.0	01Jan2007, 12:16	8.3
DOE02	0.026	29.6	01Jan2007, 12:18	7.3
DOE01	0.013	17.7	01Jan2007, 12:12	3.6
RDOE1-1	0.013	17.6	01Jan2007, 12:26	3.6
CP1	0.6312	574.9	01Jan2007, 12:33	172.6
DOE10	0.1123	140.5	01Jan2007, 12:14	30.9
CP4	0.1123	140.5	01Jan2007, 12:14	30.9
DOE09	0.038	65.4	01Jan2007, 12:07	10.5
DOE08	0.0075	12.3	01Jan2007, 12:08	2.1
CP3	0.0455	77.6	01Jan2007, 12:07	12.6
DOE07	0.0127	27.6	01Jan2007, 12:04	3.5
CP2	0.0127	27.6	01Jan2007, 12:04	3.5
DOE04	0.0121	28.7	01Jan2007, 12:04	3.6
CP6	0.0121	28.7	01Jan2007, 12:04	3.6
DOE06	0.0035	7.0	01Jan2007, 12:05	1.0
CP5	0.0035	7.0	01Jan2007, 12:05	1.0

Sub-basin data: Developed

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		18903.7		0.2817	0.2%
OS4			81	41245	0.9		10311.3		0.0015	25.0%
OS5			81	679099	15.6		0.0		0.0244	0.0%
OS6			81	642044	14.7		0.0		0.0230	0.0%
OS7			81	106844	2.5		0.0		0.0038	0.0%
OS8			81	40018	0.9		0.0		0.0014	0.0%
OS9			81	33056	0.8		0.0		0.0012	0.0%
OS10			81	209691	4.8		0.0		0.0075	0.0%
OS11			81	30937	0.7		0.0		0.0011	0.0%
OS12			81	89975	2.1		0.0		0.0032	0.0%
OS13			81	23113	0.5		0.0		0.0008	0.0%
OS14			81	221209	5.1		0.0		0.0079	0.0%
OS15			81	1929450	44.3		0.0		0.0692	0.0%
SW1			90	395421	9.1		316336.8		0.0142	80.0%
SW2			90	34536	0.8		24175.2		0.0012	70.0%
SW3			90	71520	1.6		50064.0		0.0026	70.0%
SW4			90	54101	1.2		37870.7		0.0019	70.0%
SW5			90	44205	1.0		30943.5		0.0016	70.0%
SW6			86	88059	2.0		44029.5		0.0032	50.0%
SW7			86	167017	3.8		83508.5		0.0060	50.0%
SW8			90	65418	1.5		45792.6		0.0023	70.0%
SW9			90	68930	1.6		48251.0		0.0025	70.0%
SW10			86	292446	6.7		146223.0		0.0105	50.0%
SW11			95	60668	1.4		57634.6		0.0022	95.0%
SW12			86	403007	9.3		201503.5		0.0145	50.0%
SW13			86	309449	7.1		154724.5		0.0111	50.0%
BS1			90	556046	12.8		389232.2		0.0199	70.0%
BS2			86	386025	8.9		193012.5		0.0138	50.0%
BS3			90	64049	1.5		57644.1		0.0023	90.0%
SW14			81	122297	2.8		0.0		0.0044	0.0%

2) Lag Time : Developed

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS4	1780	1768	100	0.120	5	1768	1768	0			0.0	1768.0	1768.0	0			-	4.71	**2.8**
OS5	1822	1790	300	0.107	12	1790	1770	500	0.040	3.23	2.6	1770.0	1754.0	510	0.0314	7.4	1.2	15.63	**9.4**
OS6	1754	1720	300	0.113	12	1720	1710	300	0.033	2.95	1.7	1710.0	1700.0	940	0.0106	4.3	3.7	16.96	**10.2**
OS7	1785	1760	200	0.125	8	1760	1740	87	0.230	7.74	0.2	1740.0	1740.0	0	0.0000	0.0	-	8.26	**5.0**
OS8	1810	1790	200	0.100	9	1790	1790	0	0.000	0.00	0.0	1790.0	1790.0	0	0.0000	0.0	-	8.82	**5.3**
OS9	1800	1776	100	0.240	4	1776	1760	270	0.059	3.93	1.1	1760.0	1760.0	0	0.0000	0.0	-	4.72	**2.8**
OS10	1750	1710	161	0.248	5	1710	1710	0	0.000	0.00	0.0	1710.0	1710.0	0	0.0000	0.0	-	5.16	**3.1**
OS11	1815	1805	30	0.333	1	1805	1800	0	0.000	0.00	0.0	1800.0	1800.0	0	0.0000	0.0	-	1.20	**0.7**
OS12	1761	1748	300	0.043	17	1748	1738	152	0.066	4.14	0.6	1738.0	1738.0	0	0.0000	0.0	-	17.67	**10.6**
OS13	1790	1775	95	0.158	4	1775	1775	0	0.000	0.00	0.0	1775.0	1775.0	0	0.0000	0.0	-	4.05	**2.4**
OS14	1734	1714	157	0.127	7	1714	1714	0	0.000	0.00	0.0	1714.0	1714.0	0	0.0000	0.0	-	6.60	**4.0**
OS15	1760	1732	300	0.093	13	1732	1732	0	0.000	0.00	0.0	1732.0	1624.0	2315	0.0467	9.0	4.3	16.85	**10.1**
SW1	1768	1767	100	0.010	13	1767	1754	950	0.014	1.89	8.4	1754.0	1754.0	0	0.0000	0.0	-	21.12	**12.7**
SW2	1755	1754	100	0.010	13	1754	1753	88	0.011	1.72	0.9	1753.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW3	1754	1753	100	0.010	13	1753	1752	88	0.011	1.72	0.9	1752.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW4	1752	1751	100	0.010	13	1751	1750	90	0.011	1.70	0.9	1750.0	1750.0	0	0.0000	0.0	-	13.61	**8.2**
SW5	1750	1749	100	0.010	13	1749	1748	88	0.011	1.72	0.9	1748.0	1748.0	0	0.0000	0.0	-	13.58	**8.2**
SW6	1805	1804	87	0.011	11	1804	1780	500	0.048	3.53	2.4	1780.0	1780.0	0	0.0000	0.0	-	13.13	**7.9**
SW7	1803	1802	100	0.010	13	1802	1789	590	0.022	2.39	4.1	1789.0	1789.0	0	0.0000	0.0	-	16.84	**10.1**
SW8	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW9	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW10	1755	1754	100	0.010	13	1754	1744	836	0.012	1.76	7.9	1744.0	1744.0	0	0.0000	0.0	-	20.63	**12.4**
SW11	1798	1797	24	0.042	2	1797	1761	847	0.043	3.33	4.2	1761.0	1761.0	0	0.0000	0.0	-	6.54	**3.9**
SW12	1755	1754	100	0.010	13	1754	1750	130	0.031	2.83	0.8	1750.0	1734.0	1000	0.0160	5.3	3.2	16.67	**10.0**
SW13	1753	1752	100	0.010	13	1752	1746	400	0.015	1.98	3.4	1746.0	1734.0	1200	0.0100	4.2	4.8	20.92	**12.6**
BS1	1754	1753	100	0.010	13	1753	1742	994	0.011	1.70	9.8	1742.0	1768.0	0	0.0000	0.0	-	22.49	**13.5**
BS2	1817	1816	100	0.010	13	1816	1768	710	0.068	4.20	2.8	1768.0	1768.0	0	0.0000	0.0	-	15.55	**9.3**
BS3	1762	1761	10	0.100	1	1761	1748	417	0.031	2.85	2.4	1748.0	1748.0	0	0.0000	0.0	-	3.24	**1.9**
SW14	1779	1757	100	0.220	4	1757	1749	720	0.011	1.70	7.1	1749.0	1749.0	0	0.0000	0.0	-	10.75	**6.5**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Loss RatePer SCS Method (now NRCS)

SOIL TYPES C throughout the watershed

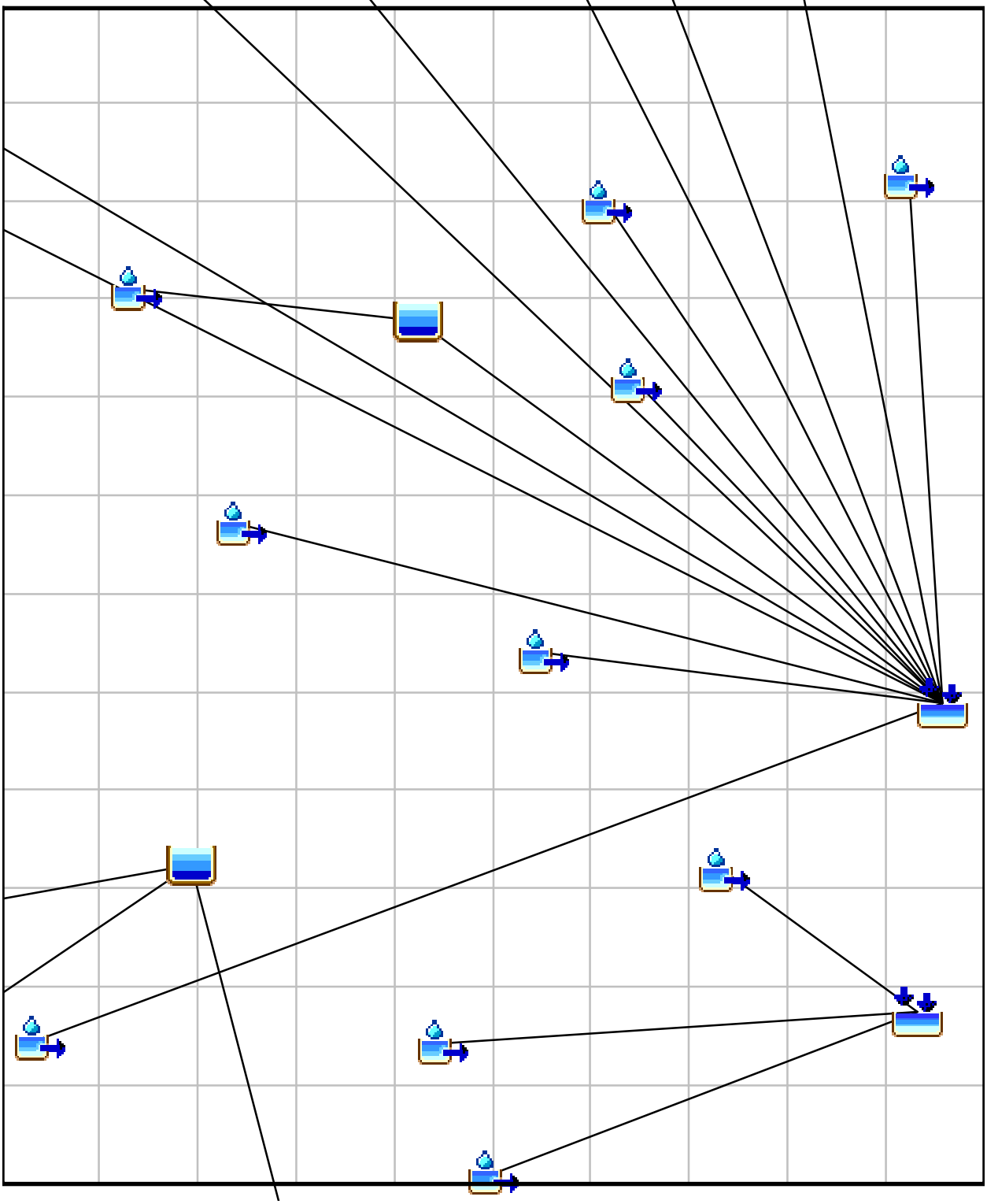
SCS CURVE NUMBER(average moisture C Soil)= 81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Dev

Sep 28 13:20:09 PDT 2018



Project: Dorado Oaks Simulation Run: DO Dev 100yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Dev
End of Run: 02Jan2007, 00:00 Meteorologic Model: 100 YR-24IN
Compute Time: 28Sep2018, 13:24:12 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.2817	256.7	01Jan2007, 12:28	77.0
OS01	0.169	148.7	01Jan2007, 12:30	46.1
OS02	0.07	71.1	01Jan2007, 12:20	17.6
OS04	0.0244	54.2	01Jan2007, 12:04	6.9
OS05	0.0244	35.1	01Jan2007, 12:10	6.7
OS06	0.023	31.9	01Jan2007, 12:11	6.3
BS01	0.0199	28.7	01Jan2007, 12:14	7.0
DB01	0.0199	10.3	01Jan2007, 12:43	6.8
SW01	0.0142	21.2	01Jan2007, 12:14	5.1
SW14	0.0044	5.2	01Jan2007, 12:15	1.1
SW03	0.0026	4.6	01Jan2007, 12:09	0.9
SW04	0.0019	3.4	01Jan2007, 12:09	0.7
SW05	0.0016	2.9	01Jan2007, 12:09	0.6
SW02	0.0012	2.1	01Jan2007, 12:09	0.4
OS09	0.0012	2.5	01Jan2007, 12:04	0.3
CP1	0.6395	546.2	01Jan2007, 12:24	176.5
OS15	0.0692	92.9	01Jan2007, 12:11	17.5
BS02	0.0138	22.4	01Jan2007, 12:10	4.5
BS03	0.0023	4.2	01Jan2007, 12:09	0.8
DB02	0.0161	6.0	01Jan2007, 12:54	4.8
SW12	0.0145	22.8	01Jan2007, 12:11	4.7
SW10	0.0105	15.1	01Jan2007, 12:13	3.4
OS12	0.0032	4.2	01Jan2007, 12:12	0.8
SW11	0.0022	5.3	01Jan2007, 12:05	0.8
CP4	0.1157	141.9	01Jan2007, 12:11	32.1
SW13	0.0111	15.8	01Jan2007, 12:14	3.6
OS14	0.0079	15.2	01Jan2007, 12:05	2.0

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP3	0.0190	26.0	01Jan2007, 12:06	5.6
SW07	0.006	9.5	01Jan2007, 12:11	2.0
OS07	0.0038	7.0	01Jan2007, 12:06	1.1
SW06	0.0032	5.6	01Jan2007, 12:09	1.1
CP6	0.0130	20.7	01Jan2007, 12:08	4.1
OS10	0.0075	15.4	01Jan2007, 12:04	1.9
SW09	0.0025	4.5	01Jan2007, 12:09	0.9
SW08	0.0023	4.1	01Jan2007, 12:09	0.8
CP2	0.0123	21.9	01Jan2007, 12:05	3.6
OS13	0.008	17.2	01Jan2007, 12:04	2.0
OS08	0.0014	2.1	01Jan2007, 12:10	0.4
OS11	0.0011	2.6	01Jan2007, 12:03	0.3
CP5	0.0105	20.9	01Jan2007, 12:03	2.7

Appendix D

Project # 27082.00
Dorado Oaks
Date: 09-25-2018
Storm Water Quality Calculations

Swale #	Design Intensity	Runoff Coefficient	Tributary Area	Design Flow	Swale Bottom Width	Side Slope	A	A/P	Q	Depth of flow[1]	Design Slope (1%)	Design Flow Velocity	Contact Time	Design Length
	in/hr		ac.	cfs	ft	ft/ft				in	ft/ft	ft/sec	min	ft
SW1	0.20	0.60	9.1	1.089	5.0	3	3.2500	0.541	1.310	6.0	0.010	0.3	10.0	201
SW2	0.20	0.60	0.8	0.095	2.0	3	0.5200	0.294	0.114	2.4	0.010	0.2	10.0	110
SW3	0.20	0.60	1.6	0.197	2.0	3	0.8700	0.368	0.239	3.6	0.010	0.2	10.0	136
SW4	0.20	0.60	1.2	0.149	2.0	3	0.7228	0.340	0.183	3.1	0.010	0.2	10.0	124
SW5	0.20	0.60	1.0	0.122	2.0	3	0.6187	0.318	0.146	2.8	0.010	0.2	10.0	118
SW6	0.20	0.60	2.0	0.243	2.0	3	1.0268	0.394	0.301	4.1	0.010	0.2	10.0	142
SW7	0.20	0.60	3.8	0.460	2.0	3	1.6027	0.470	0.561	5.6	0.010	0.3	10.0	172
SW8	0.20	0.60	1.5	0.180	2.0	3	0.8323	0.361	0.224	3.5	0.010	0.2	10.0	130
SW9	0.20	0.60	1.6	0.190	2.0	3	0.8323	0.361	0.224	3.5	0.010	0.2	10.0	137
SW10	0.20	0.60	6.7	0.806	5.0	3	2.7047	0.497	1.001	5.2	0.010	0.3	10.0	179
SW11	0.20	0.60	1.4	0.167	2.0	3	0.7587	0.347	0.196	3.2	0.010	0.2	10.0	132
SW12	0.20	0.60	9.3	1.110	5.0	3	3.3303	0.547	1.358	6.1	0.010	0.3	10.0	200
SW13	0.20	0.60	7.1	0.852	5.0	3	2.7808	0.504	1.043	5.3	0.010	0.3	10.0	184

GEOTECHNICAL ENGINEERING STUDY UPDATE
FOR
STONEHENGE SPRINGS

Faith Lane
Diamond Springs, California

Project No. E07309.002
June 2018

YOUNGDAHL
CONSULTING GROUP, INC.

Building Innovative Solutions

YOUNGDAHL CONSULTING GROUP, INC.
Building Innovative Solutions
1234 Glenhaven Court, El Dorado Hills, CA 95762
4300 Anthony Court, Unit D, Rocklin, CA 95677
ph 916.933.0633 fx 916.933.6482
www.youngdahl.net
30 YEARS

Stonehenge Springs, LLC
2700 South Azusa Avenue
West Covina, California 91792

Project No. E07309.002
4 June 2018

Attention: Mr. Kevin Sweeney

Subject: **STONEHENGE SPRINGS**
Faith Lane, Diamond Springs, California
GEOTECHNICAL ENGINEERING STUDY UPDATE

References:
1. Geotechnical Engineering Study for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 24 September 2017 (Project No. E07309.000).
2. NRCS Soil Survey Addendum Letter for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 17 December 2017 (Project No. E07309.000).
3. Summary of Additional Exploration for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 12 May 2008 (Project No. E07309.001).
4. Proposed Lotting for Stonehenge Springs, prepared by CTA Engineering and Surveying, dated 20 April 2018.
5. Executed Contract for Stonehenge Springs GES Update, prepared by Youngdahl Consulting Group, Inc., dated 11 May 2018 (Project No. E07309.002).

Dear Mr. Sweeney:

In accordance with your authorization, Youngdahl Consulting Group, Inc. has performed a Geotechnical Engineering Study Update for the project site located at the south end of Faith Lane in Diamond Springs, California. The purpose of this study was to perform an update to the Reference No. 1 report for use at the project site to address current standards of practice and the requirements of the 2016 California Building Code. Our scope was limited to a site reconnaissance, review of the previous reports (Reference Nos. 1 through 3), and preparation of this report per the Reference No. 5 contract.

Based upon our site reconnaissance and review of previous reports, it is our opinion that the primary geotechnical issues to be addressed consist of the existence of undocumented fills and previous grading activity, shallow bedrock conditions, and drainage related to the shallow bedrock. Due to the non-uniform nature of soils, other geotechnical issues may become more apparent during grading operations which are not listed above. The descriptions, findings, conclusions, and recommendations provided in this report are formulated as a whole; specific conclusions or recommendations should not be derived or used out of context. Please review the limitations and uniformity of conditions section of this report.

This report has been prepared for the exclusive use of Stonehenge Springs, LLC and their consultants, for specific application to this project, in accordance with generally accepted geotechnical engineering practice. Should you have any questions or require additional information, please contact our office at your convenience.

Very truly yours,
Youngdahl Consulting Group, Inc.

Devin S. Fielding
Staff Engineer

Reviewed By:

John C. Youngdahl, P.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
JOHN C. YOUNGDAHL
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Distribution: PDF to Client

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GEOTECHNICAL ENGINEERING STUDY UPDATE
FOR
STONEHENGE SPRINGS

1.0 INTRODUCTION

This report presents the results of our Geotechnical Engineering Study Update performed for the proposed residential development planned to be constructed at the south end of Faith Lane in Diamond Springs, California. An annotated vicinity map is provided on Figure A-1 to identify the approximate project location.

Purpose and Scope

The purpose of this study was to evaluate the surface conditions at the site, to update geotechnical information and design criteria, and to update geotechnical recommendations for the proposed project. The scope of this study includes the following:

- A review of previous reports, geotechnical data, and geologic data available to us at the time of our study;
- A field study consisting of a site reconnaissance;
- Engineering analysis of the data and information obtained from our previous involvement;
- Review and updating of geotechnical recommendations for earthwork construction and geotechnical design criteria for seismic conditions, shallow foundations, retaining walls, slabs on grade, underground utilities, and pavements;
- Preparation of this report summarizing our findings, conclusions, and recommendations regarding the above described information.

Project Understanding

Based on the Reference No. 4 plans, we understand that the proposed development is expected to include 76 attached units, 136 cluster units, and 156 single-family residences. Appurtenant construction is expected to include associated roads and utilities. The proposed construction is expected to be of wood frame construction and be supported by conventional shallow foundations with concrete slab-on-grade floors. The project area is irregularly shaped, extending south of Faith Lane in Diamond Springs, California.

Background

Review of available information and aerial photos indicate that the project site was previously graded in the northern portions of the property. Fills from 2 feet in depth were encountered along the eastern portion (west of existing Walker Drive and Fowler Lane), and the building pads and streets, which were partially graded to the northwest, appear to be entirely into cut.

If studies or plans pertaining to the site exist and are not cited as a reference in this report, we should be afforded the opportunity to review and modify our conclusions and recommendations as necessary.

2.0 FINDINGS

The following section describes our findings regarding the site conditions that we observed during our site reconnaissance. In addition, this section also provides the results of our geologic review and engineering assessment related to the project site.

Surface Observations
The project site is an irregularly shaped vacant parcel located at the southern end of Faith Lane in Diamond Springs, California and encompasses approximately 144 acres. The project limits include Faith Lane to the north, existing residences to the east and west, and open, undeveloped land to the south. Topography, aside from the existing graded areas, consists of moderate to low hills. Drainage swales with north/south orientations are present at various locations throughout the site. A pump station for sewer service is located in the northeast area of the site. Vegetation across the site includes moderate to thick growth of grasses, bushes and trees. Several bedrock outcrops were observed throughout the site. Bedrock was also visible in many of the areas cut during previous grading activity. Standing and slowly flowing water was observed in isolated low areas at various locations throughout the site. Isolated areas of trash and debris were present at various locations throughout the site.

Subsurface Conditions
The subsurface conditions encountered in 2007 for the development of the Reference No. 1 report primarily consisted of silty sands in a loose to medium dense and dry to moist condition overlying metavolcanic bedrock. Bedrock was encountered at depths ranging from 0 to 6 feet with the exception of test pits where undocumented fills were encountered. The fills are located at the east-middle area of the site. The depths of undocumented fills are highly variable and can range from approximately 8 feet to 20 feet. Please refer to Reference Nos. 1 and 3 for more detailed information of fill locations and profiles.

Groundwater Conditions
Groundwater conditions were not observed at excavated test pit locations in 2007. However, during our site reconnaissance on 31 May 2018, surface water (standing and slowly flowing) was observed at various locations throughout the project site possibly due to a relatively recent rain. Generally, subsurface water conditions vary in the foothill regions because of many factors such as, the proximity to bedrock, fractures in the bedrock, topographic elevations, and proximity to surface water. Some evidence of past repeated exposure to subsurface water may include black staining on fractures, clay deposits, and surface markings indicating previous seepage. Based on our experience in the area, at varying times of the year water may be perched on less weathered rock and/or present in the fractures and seems of the weathered rock found beneath the site.

Geologic Conditions
The geologic portion of this report included a review of geologic data pertinent to the site, and an interpretation of our observations and the Logs of Exploratory Test Pits excavated during the previous field studies. The site is located at the foot of the Sierra Foothills region of the Sierra Nevada Mountain Range. According to the 1:48,000 scale General Geology of the Placerville 15-Minute Quadrangle of the California State Geology map, the project site is underlain by highly weathered Mesozoic Granitic to Dioritic plutonic rocks, both of Mesozoic Age (Loyd and others, 1983); however, local conditions observed by a geologist during exploration indicates shallow metavolcanic bedrock is present as well. Weathering of these bedrock materials has contributed largely to the overburden soils on the subject site.

Seismicity
According to the Fault Activity Map of California and Adjacent Areas (Jennings, 2010) and the Alquist-Priolo Regulatory Maps, no active faults or Earthquake Fault Zones (Special Studies Zones) are located on the project site. Additionally, no evidence of recent or active faulting was observed during our previous field study. The nearest mapped faults to the site are related to the Bear Mountains and Melones Fault Zones (inactive). The Bear Mountains Fault Zone is located

approximately 10 kilometers west of the site. Branches of the Melones Fault Zone traverse through the northern portion of the site. The nearest mapped potentially active and active faults pertinent to the site are summarized in the following table.

Table 1: Local Active and Potentially Active Faults

Activity	Fault Name	Distance, Direction
Historic	Cleveland Hill	97 km NW
Historic	Dog Valley Fault	95 km NE
Active	Dunnigan Hills	90 km W
Active	North Tahoe Fault	80 km NE
Active	Polaris Fault	90 km NE
Active	West Tahoe Fault	68 km NE
Potentially Active	Maidu Fault	20 km NW

Based on our literature review of shear-wave velocity characteristics of geologic units in California (Wills and Silva; August 1998: Earthquake Spectra, Volume 14, No. 3) and subsurface interpretations, we recommend that the project site be classified as Site Class C in accordance with Section 1613.3.2 of the 2016 CBC and Table 20.3-1 of ASCE 7-10.

Earthquake Induced Liquefaction, Surface Rupture Potential, and Settlement

Liquefaction is the sudden loss of soil shear strength and sudden increase in porewater pressure caused by shear strains, as could result from an earthquake. Research has shown that saturated, loose to medium-dense sands with a silt content less than about 25 percent and located within the top 40 feet are most susceptible to liquefaction and surface rupture/lateral spreading.

Due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area and the relatively shallow depth to rock, the potential for seismically induced damage due to liquefaction, surface ruptures, and settlement is considered negligible. For the above-mentioned reasons mitigation for these potential hazards is not required for the development of this project.

Static and Earthquake Induced Slope Instability

The existing slopes on the project site were observed to have adequate vegetation on the slope face, appropriate drainage away from the slope face, and no apparent tension cracks or slump blocks in the slope face or at the head of the slope. Additionally, due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area, and the relatively shallow depth to rock, the potential for seismically induced slope instability for the existing slopes is considered negligible.

Soil Expansion Potential

The materials encountered in our explorations were non-plastic materials which are considered to be relatively non-expansive. We do not anticipate that special design considerations for expansive soils will need to be addressed for the design or construction of the proposed improvements. If expansive soils are encountered which were not disclosed during our studies, recommendations can be made at that time based on our observations.

Soil Corrosivity

A corrosivity testing suite consisting of soil pH, resistivity, sulfate, and chloride content tests were performed on selected soil samples for the development of the Reference No. 1 report. We are

not corrosion specialists and recommend that the results be evaluated by a qualified corrosion expert. The laboratory test results are summarized in Table 2, below.

Table 2: Corrosivity Summary

Location	Depth (ft)	Soil pH	Minimum Resistivity ohm-cm (x1000)	Chloride (ppm)	Sulfate (ppm)	Caltrans Environment	ACI Environment
TP-2	0-3	5.34	12.33	13.2	0.3	Potentially Corrosive	S0 (Not a Concern)
TP-9	0-5	5.14	14.47	7.0	0.1	Potentially Corrosive	S0 (Not a Concern)

According to Caltrans Corrosion Guidelines Version 2.1, January 2015, the test results appear to indicate a potentially corrosive environment. A certified corrosion engineer should be consulted for specific mitigation recommendations if metallic pipes, structural elements, or MSE structure backfill are designed to be in contact with or buried in soil. According to the 2016 California Building Code Section 1904.1 and ACI 318-14 Table 19.3.1.1, the test results indicate the onsite soils have a negligible potential for sulfide attack of concrete. Accordingly, Type I/II Portland cement is appropriate for use in concrete construction.

Naturally Occurring Asbestos

Asbestos is classified by the EPA as a known human carcinogen. Naturally occurring asbestos (NOA) has been identified as a potential health hazard. The California Geological Survey published a map in 2000 (Open File Report 2000-02) that qualitatively indicates the likelihood for NOA in western El Dorado County. The project site is identified as not being in a NOA review zone based on the published map.

3.0 DISCUSSION AND CONCLUSIONS

General

Based upon the results of our field explorations and analysis, it is our opinion that construction of the proposed improvements is feasible from a geotechnical standpoint, provided the recommendations contained in this report are incorporated into the design plans and implemented during construction. The native soils, rock, and/or engineered fills composed of like materials and processed and compacted as recommended below are considered suitable for support of the planned improvements. The existing fills and fill stockpiles are relatively loose and are not considered suitable for support of the proposed improvements in their current condition. Recommendations are presented below for the overexcavation and recompaction of the existing fill materials on the site.

4.0 SITE GRADING AND EARTHWORK IMPROVEMENTS

Site Preparation

Preparation of the project site should involve site drainage controls, dust control, clearing and stripping, overexcavation and recompaction of existing fills, and exposed grade compaction considerations. The following paragraphs state our geotechnical comments and recommendations concerning site preparation.

Site Drainage Controls: We recommend that initial site preparation involve intercepting and diverting any potential sources of surface or near-surface water within the construction zones. Because the selection of an appropriate drainage system will depend on the water quantity, season, weather conditions, construction sequence, and methods used by the contractor, final

decisions regarding drainage systems are best made in the field at the time of construction. All drainage and/or water diversion performed for the site should be in accordance with the Clean Water Act and applicable Storm Water Pollution Prevention Plan.

Swales and natural hillside drainage proposed to receive engineered fill may require the installation of canyon style drains (similar to Figure C-1, Appendix C) to mitigate for potential subsurface waters. Close coordination between the design professionals for placement and discharge of canyon style drains should be performed.

Dust Control: Dust control provisions should be provided for as required by the local jurisdiction's grading ordinance (i.e. water truck or other adequate water supply during grading).

Clearing and Stripping: Clearing and stripping operations should include the removal of all organic laden materials including trees, bushes, root balls, root systems, and any soft or loose soil generated by the removal operations. Surface grass stripping operations are necessary based upon our observations during our site visit. Short or mowed dry grasses may be pulverized and lost within fill materials provided no concentrated pockets of organics result. It is the responsibility of the grading contractor to remove excess organics from the fill materials. No more than 2 percent of organic material, by weight, should be allowed within the fill materials at any given location.

General site clearing should also include removal of any loose or saturated materials within the proposed structural improvement and pavement areas. A representative of our firm should be present during site clearing operations to identify the location and depth of potential fills not disclosed by this report, to observe removal of deleterious materials, and to identify any existing site conditions which may require mitigation or further recommendations prior to site development. Preserved trees may require tree root protection which should be addressed on an individual basis by a qualified arborist.

Addressing Existing Fills: Following general site clearing, all fills and fill stockpiles should be over-excavated down to firm native materials. Reference should be made to Reference No. 1 and 3 reports for anticipated fill locations. Due to the previous grading activities on the site, undocumented fills should also be anticipated to be present throughout the site. Any depressions extending below final grade resulting from the removal of fill materials or other deleterious materials should be properly prepared as discussed below and backfilled with engineered fill. Prior to placement of engineered fill, the exposed soil surfaces receiving fills should be scarified to a minimum depth of 8 inches, moisture conditioned as necessary, and compacted to at least 90 percent of the maximum dry density based on the ASTM D1557 test method. Additionally, test pits should be re-excavated and backfilled with engineered fill.

Exposed Grade Compaction: Exposed soil grades following initial site preparation activities and overexcavation operations should be scarified to a minimum depth of 8 inches and compacted to the requirements for engineered fill. Prior to placing fill, the exposed subgrades should be in a firm and unyielding state. Any localized zones of soft or pumping soils observed within a subgrade should either be scarified and recompacted or be overexcavated and replaced with engineered fill as detailed in the engineered fill section below.

Excavation Characteristics

The test pits were excavated for the preparation of the Reference No. 1 report using a CASE 580M backhoe equipped with an 18-inch-wide bucket. The degree of difficulty encountered in excavating the test pits is an indication of the effort that will be required for excavation during

construction. Based on our previous test pits, we expect that the site soils can be excavated using conventional earthmoving equipment such as a Caterpillar D8 or larger for mass grading and rubber tired backhoe for trench excavations.

The underlying rock materials can likely be excavated to depths of several feet using dozers equipped with rippers. We expect that the upper, weathered portion of the rock, indicated to extend 0 to 3 feet below the surface at most locations, will require use of a Caterpillar D8 equipped with a single or multiple shank rippers, or similar equipment. We anticipate that a ripper equipped D8 can penetrate at least as deep as our test pits at most locations with moderate effort. Deeper excavation into the less weathered rock may require heavier equipment, such as a D9, or a D10. Blasting cannot be ruled out in areas of resistant rock.

Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. When hard rock is encountered, we should be contacted to provide additional recommendations prior to performing an alternative such as blasting.

Utility trenches will likely encounter hard rock excavation conditions especially in deeper cut areas. Utility contractors should be prepared to use special rock trenching equipment such as large excavators (CAT 235 or CAT 245 or equivalent). Blasting to achieve utility line grades, especially in planned cut areas, cannot be precluded. Water inflow into any excavation approaching hard rock surface is likely to be experienced in all but the driest summer and fall months. Pre-ripping during mass grading may be beneficial and should be considered with the Geotechnical Engineer prior to, or during mass grading.

Soil Moisture Considerations

The near-surface soils may become partially or completely saturated during the rainy season. Grading operations during this time period may be difficult since compaction efforts may be hampered by saturated materials. Therefore, we suggest that consideration be given to the seasonal limitations and costs of winter grading operations on the site. Special attention should be given regarding the drainage of the project site.

If the project is expected to work through the wet season, the contractor should install appropriate temporary drainage systems at the construction site and should minimize traffic over exposed subgrades due to the moisture-sensitive nature of the on-site soils. During wet weather operations, the soil should be graded to drain and should be sealed by rubber tire rolling to minimize water infiltration.

Compaction Equipment

In areas to receive structural fill, a Caterpillar 825 steel-wheel compactor, large vibratory padded drum compactor, or approved equivalent should be employed as a minimum to facilitate breakdown of oversize bedrock materials and generation of soil fines during the fill placement process. If the quantity of rock fragments in the fills precludes traditional compaction testing, then the proposed fills should be compacted using method specifications as indicated below.

Engineered Fill Criteria

All materials placed as fills on the site should be placed as “Engineered Fill" which is observed, tested, and compacted as described in the following paragraphs.

Suitability of Onsite Materials: We anticipate that a large amount of onsite soils will be generated during mass grading operations. We expect that soil generated from excavations on the site,

excluding deleterious material, may be used as engineered fill provided the material does not exceed the maximum size specifications listed below.

Rock fragments or boulders exceeding 12 inches in maximum dimension should not be placed within the upper five feet of site grades or utility corridors. Boulders over 18 inches in maximum dimension should be placed within the deeper portions of fill embankments below a depth of 5 feet and a minimum of 5 feet from the finish slope face. The individual boulders should be spaced such that compaction of finer rock and soil materials between the boulders can be achieved with the equipment being used for compaction. Materials placed between the boulders should consist of predominantly soil and rock less than 12 inches in maximum dimension. The soil/rock mixture should be thoroughly mixed and placed between the boulders so as to preclude nesting or the formation of voids. Should insufficient deep fill areas exist for oversize rock disposal, the contractor should either dispose of the excess materials to an offsite location or mechanically reduce the rocks to less than 12 inches.

Import Materials: If imported fill material is needed for this project, import material should be approved by our firm prior to transporting it to the project. It is preferable that import material meet the following requirements:

1. Plasticity index not to exceed 12;
2. "R"-value of equal to or greater than 40;
3. Should not contain rocks larger than 6 inches in diameter;
4. Not more than 15 percent passing through the No. 200 sieve.

If these requirements are not met, additional testing and evaluation may be necessary to determine the appropriate design parameters for foundations, pavement, and other improvements.

Fill Placement and Compaction: All areas proposed to receive fill should be scarified to a minimum depth of 8 inches, moisture conditioned as necessary, and compacted to at least 90 percent of the maximum dry density based on the ASTM D1557 test method. The fill should be placed in thin horizontal lifts not to exceed 12 inches in uncompacted thickness. The fill should be moisture conditioned as necessary and compacted to a relative compaction of not less than 90 percent based on the ASTM D1557 test method. The upper 8 inches of fills placed under proposed pavement areas should be compacted to a relative compaction of not less than 95 percent based on the ASTM D1557 test method.

To mitigate the potential for deep fill settlement, all fills placed deeper than 10 feet from finished grade should be compacted to a minimum of 95 percent relative compaction. The fills should be placed at a minimum of two percent over optimum moisture content.

Fill soil compaction should be evaluated by means of in-place density tests performed during fill placement so that adequacy of soil compaction efforts may be determined as earthwork progresses, or by method specification if the quantity of rock fragments in the fills preclude traditional compaction testing. This will likely include the excavation of test pits within the fill materials to observe and document that a uniform over-optimum moisture condition and absence of large and/or concentrated voids has been achieved prior to additional fill placement.

Method Specification: Soils exceeding 30 percent rock by mass may be considered non-testable by conventional methods. The materials may be placed as engineered fill if placed in accordance with the following method specification during full time observation by a representative of our firm.

Soils should be moisture conditioned and compacted in place by a minimum of four completely covering passes with a Caterpillar 825, or approved equivalent. The compactor's last two passes should be at 90 degrees to the initial passes. In areas where 95 percent relative compaction is designated, an additional two passes should be applied in each direction, with three completely covering passes made at 90 degrees to the initial three passes. Engineered fill should be constructed in lifts not exceeding 12 inches in uncompacted thickness, moisture conditioned and compacted in accordance with the above specification. Additional passes as deemed necessary during fill placement to achieve the desired condition based upon field conditions may be recommended.

Slope Configuration and Grading

The project site is proposed to have cuts and fill with a maximum slope orientation of 2H:1V (Horizontal:Vertical). Generally a cut slope orientation of 2H:1V is considered stable with the material types encountered on the site. A fill slope constructed at the same orientation is considered stable if compacted to the engineered fill recommendations as stated in the recommendations section of this report. All slopes should have appropriate drainage and vegetation measures to minimize erosion of slope soils.

Placement of Fills on Slopes: Placement of fill material on natural slopes should be stabilized by means of keyways and benches. Where the slope of the original ground equals or exceeds 5H:1V, a keyway should be constructed at the base of the fill. The keyway should consist of a trench excavated to a depth of at least two feet into firm, competent materials. The keyway trench should be at least 10 feet wide or as designated by our firm based on the conditions at the time of construction. Benches should be cut into the original slope as the filling operation proceeds. Each bench should consist of a level surface excavated at least six feet horizontally into firm soils or four feet horizontally into rock. The rise between successive benches should not exceed 36 inches. The need for subdrainage should be evaluated at the time of construction. Refer to Figure C-2 in Appendix C for typical keyway and bench construction.

Slope Face Compaction: All slope fills should be laterally overbuilt and cut back such that the required compaction is achieved at the proposed finish slope face. As a less preferable alternative, the slope face could be track walked or compacted with a wheel. If this second alternative is used, additional slope maintenance may be necessary.

Slope Drainage: Surface drainage should not be allowed to flow uncontrolled over any slope face. Adequate surface drainage control should be designed by the project civil engineer in accordance with the latest applicable edition of the CBC. All slopes should have appropriate drainage and vegetation measures to minimize erosion of slope soils.

Underground Improvements

Trench Excavation: Trenches or excavations in soil should be shored or sloped back in accordance with current OSHA regulations prior to persons entering them. The potential use of a shield to protect workers cannot be precluded. Refer to the Excavation Characteristics section of Site Grading and Improvements of this report for anticipated excavation conditions.

Backfill Materials: Backfill materials for utilities should conform to the requirements of the local jurisdiction. It should be realized that permeable backfill materials will likely carry water at some time in the future.

When backfilling within structural footprints, compacted low permeability materials are recommended to be used a minimum of 5 feet beyond the structural footprint to minimize moisture

intrusion. If the materials are too rocky, they may need to be screened prior to backfill in order to limit pipe damage. If a permeable material is used as backfill within this zone, subdrainage mitigation may be required. In addition, if the structure is oriented below the roadway and associated utilities, grout cutoffs and/or plug and drains around all utility penetrations are useful to keep moisture out from underneath the structure.

A common problem occurs on sites graded with large equipment and rocky fill materials where the excavated spoils from the lot utilities are too rocky to place as engineered fill back in the trench with the common compaction practices employed by the subcontractors installing these utilities. We recommend that, where excavated soils are too rocky to place and compact to a tight condition with low void space, these materials be replaced with a proper import material for compaction.

Backfill Compaction: Backfill compaction should conform to the requirements of the local jurisdiction. Where backfill compaction is not specified by the local jurisdiction, the backfill should be compacted to a minimum of 90 percent relative compaction per the ASTM D1557 test method. Compaction should be accomplished using lifts which do not exceed 12 inches when compacting with a backhoe or larger equipment equipped with a compaction wheel. However, thickness of the lifts should be determined by the contractor. If the contractor can achieve the required compaction using thicker lifts, the method may be judged acceptable based on field verification by a representative of our firm using standard density testing procedures. Lightweight compaction equipment may require thinner lifts to achieve the required densities.

Drainage Considerations: In developments with the potential for a perched groundwater condition (i.e. shallow bedrock), underground utilities can become collection points for subsurface water. Due to this condition, we recommend plug and drains within the utility trenches (Figure C-3, Appendix C) to collect and convey water to the storm drain system or other approved outlet. Temporary dewatering measures may be necessary and could include the installation of submersible pumps and/or point wells. Once plans are developed, the civil engineer should coordinate with us to discuss the locations of plug and drains.

5.0 DESIGN RECOMMENDATIONS

Seismic Criteria

Based on the 2016 California Building Code, Chapter 16, and our site investigation findings, the following seismic parameters are recommended from a geotechnical perspective for structural design. The final choice of design parameters, however, remains the purview of the project structural engineer.

Table 3: Seismic Design Parameters

2016 CBC	ASCE 7-10	Seismic Parameter	Recommended Value
	Table 20.3-1	Site Class	C
Figure 1613.3.1(1)		Short-Period MCE at 0.2s, S_S	0.460g
Figure 1613.3.1(2)		1.0s Period MCE, S_1	0.227g
Table 1613.3.3(1)		Site Coefficient, F_a	1.200
Table 1613.3.3(2)		Site Coefficient, F_v	1.573
Equation 16-37		Adjusted MCE Spectral Response Parameters, $S_{MS} = F_a S_s$	0.552g
Equation 16-38		Adjusted MCE Spectral Response Parameters, $S_{M1} = F_v S_1$	0.357g
Equation 16-39		Design Spectral Acceleration Parameters, $S_{DS} = ⅔ S_{MS}$	0.368g
Equation 16-40		Design Spectral Acceleration Parameters, $S_{D1} = ⅔ S_{M1}$	0.238g
Table 1613.3.5(1)		Seismic Design Category (Short Period), Occupancy I to III	C
Table 1613.3.5(1)		Seismic Design Category (Short Period), Occupancy IV	C
Table 1613.3.5(2)		Seismic Design Category (1-Second Period), Occupancy I to IV	D
	Figure 22-7	Maximum Considered Earthquake Geometric Mean (MCE_C) PGA	0.151g
	Table 11.8-1	Site Coefficient F_{PGA}	1.200
	Equation 11.8-1	$PGA_M = F_{PGA}$ PGA	0.181g

*Based on the online calculator available at http://earthquake.usgs.gov/designmaps/us/application.php

Shallow Conventional Foundations

We offer the following comments and recommendations for purposes of design and construction of shallow continuous and/or isolated pad foundations. The provided minimums do not constitute a structural design of foundations which should be performed by the structural engineer. Our firm should be afforded the opportunity to review the project grading and foundation plans to confirm the applicability of the recommendations provided below. Modifications to these recommendations may be made at the time of our review. In addition to the provided recommendations, foundation design and construction should conform to applicable sections of the 2016 California Building Code.

Foundation Bearing Capacities: An allowable dead plus live load bearing pressure of 2,500 psf may be used for design of conventional shallow foundations based on firm native soils or engineered fills and 4,000 for foundation based on weathered bedrock. The allowable pressures are for support of dead plus live loads and may be increased by 1/3 for short-term wind and seismic loads.

Foundation Lateral Pressures: Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.35 may be utilized for sliding resistance at the base of conventional shallow foundations in firm native materials or engineered fill. A passive resistance of 350 pcf equivalent fluid weight may be used against the side of

conventional shallow footings in firm native soil or engineered fill. If friction and passive pressures are combined, the lesser value should be reduced by 50 percent.

Foundation Settlement: A total settlement of less than 1 inch is anticipated; a differential settlement of ½ of the total is anticipated where foundations are bearing on like materials. This settlement is based upon the assumption that foundation will be sized and loaded in accordance with the recommendations in this report.

Foundation Configuration: Conventional shallow foundations should be a minimum of 12 inches wide and founded a minimum of 12 inches below the lowest adjacent soil grade for one and two-story slab-on-grade single-family residences. Conventional shallow foundations should be a minimum of 12 inches wide and 18 inches below the lowest adjacent soil grade for larger single-family configurations and multi-family structures. Isolated pad foundation should be a minimum of 24 inches in diameter. Footings on sloping ground with a gradient of 5H:1V or less should be constructed level and imbedded a minimum of 18 inches below the lowest adjacent grade.

Foundation reinforcement should be provided by the structural engineer. The reinforcement schedule should account for typical construction issues such as load consideration, concrete cracking, and the presence of isolated irregularities. At a minimum, we recommend that continuous footing foundations for single family residences be reinforced with two No. 4 reinforcing bars, one located near the bottom of the footing and one near the top of the stem wall. Where foundations for single family residences are constructed within a cut-fill transition, soil to rock interface, or over minor surface irregularities (i.e. point load conditions within resistant bedrock), as a consideration to span these localized differential irregularities, we suggest that structural footing reinforcing steel be doubled top and bottom (minimum, four No. 4 reinforcing bars, two each top and bottom) extending a minimum of 10 feet continuous length on both sides of the transition/irregularity. Reinforcing steel for multi-family residential structures should consist of a minimum of four No. 4 reinforcing bars; two each top and bottom at all areas of the foundation.

All footings should be founded below an imaginary 2H:1V plane projected up from the bottoms of adjacent footings and/or parallel utility trenches, or to a depth that achieves a minimum horizontal clearance of 6 feet from the outside toe of the footings to the slope face, whichever requires a deeper excavation.

Subgrade Conditions: Footings should never be cast atop soft, loose, organic, slough, debris, nor atop subgrades covered by ice or standing water. A representative of our firm should be retained to observe all subgrades during footing excavations and prior to concrete placement so that a determination as to the adequacy of subgrade preparation can be made.

Shallow Footing / Stemwall Backfill: All footing/stemwall backfill soil should be compacted to at least 90 percent of the maximum dry density (based on ASTM D1557).

Crawlspace: If the exterior grades are planned to be higher in elevation than the interior crawlspace grades, a foundation subdrain is recommended. The subdrain should be consist of a trench excavated to a minimum of 2 feet below the crawlspace floor, sloping at a minimum of 1 percent to drain and filled with ¾ inch crushed rock wrapped in filter fabric such as Mirafi 140NC or equivalent. A layer of 10 mil visquene should be placed against the foundation, slope down to the trench, and line the building side, base, and lower 4 inches of the non-building side. A 12 inch compacted soil cap should be placed over the drain to protect the drain elements. A 4 inch rigid wall perforated drain pipe should be placed at the base of the trench and sloping at a gradient of 1 percent toward the outlet.

Ventilation for the crawlspace should meet minimum code requirements as well as be uniformly spaced around the perimeter of the structures.

Differential Support Conditions: Differential support conditions may be a concern where fills are placed and compacted for construction of a building pad and the proposed building will span from a native to deep fill condition (i.e. fills greater than 10 feet). In order to mitigate the potential for differential settlement, overexcavation of the cut portion of the building pad, deepening of the foundations or adjustment of compaction requirements may be recommended. We should be afforded the opportunity to review the construction plans in order to develop site specific recommendations regarding differential conditions.

Retaining Walls

Our design recommendations and comments regarding retaining walls for the project site are discussed below.

Foundation Design Parameters: An allowable dead plus live load bearing pressure of 2,500 psf may be used for design of conventional shallow foundations based on firm native soils or engineered fills and 4,000 for foundation based on weathered bedrock. The allowable pressures are for support of dead plus live loads and may be increased by 1/3 for short-term seismic loads.

Foundation Lateral Pressures: Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.35 may be utilized for sliding resistance at the base of conventional shallow foundations in firm native materials or engineered fill. A passive resistance of 350 pcf equivalent fluid weight may be used against the side of conventional shallow footings in firm native soil or engineered fill. If friction and passive pressures are combined, the lesser value should be reduced by 50 percent.

Retaining Wall Lateral Pressures: Based on our observations and testing, the retaining wall should be designed to resist lateral pressure exerted from a soil media having an equivalent fluid weight provided in Table 4, below. In accordance with Section 1803.5.12.1 of the 2016 California Building Code, application of the seismic design values for earthquake loading are required for retaining walls supporting more than 6 feet of backfill.

Table 4: Retaining Wall Pressures

Wall Type	Wall Slope Configuration	Equivalent Fluid Weight (pcf)	Surcharge Load (psf)*	Lateral Pressure Coefficient	Earthquake Loading (plf)***	
Free Cantilever	Flat	40	per structural	0.33	$5H^2$	Applied 0.6H above the base of the wall
	2H:1V	60	per structural	0.50		
Restrained**	Flat	60	per structural	0.50	$19H^2$	

* The surcharge loads should be applied as uniform loads over the full height of the walls as follows: Surcharge Load (psf) = (q) (K), where q = surcharge in psf, and K = coefficient of lateral pressure. Final design is the purview of the project structural engineer.

** Restrained conditions shall be defined as walls which are structurally connected to prevent flexible yielding, or rigid wall configurations (i.e. walls with numerous turning points) which prevent the yielding necessary to reduce the driving pressures from an at-rest state to an active state.

*** Section 1803.5.12 of the 2016 California Building Code states that a determination of lateral pressures on basement and retaining walls due to earthquake loading shall be provided for structures to be designed in Seismic Design Categories D, E or F (Load value derived from Wood (1973) and modified by Whitman (1991)).

Mechanically Stabilized Earth Walls: If keyed or interlocking non-mortared walls such as Keystone, Baselite, Allen Block, or rockery walls are utilized, the following soil parameters would be applicable for design within on-site, native materials:

Table 5: Modular Retaining Wall Design Parameters

Internal Angle of Friction	Cohesion	Bulk Unit Weight
31°	0 psf	120 psf

Site Wall Drainage: The above criteria are based on fully drained conditions as detailed in the attached Figure C-4, Appendix C. For these conditions, we recommend that a blanket of filter material be placed behind all proposed walls. The blanket of filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to within 12 inches of the ground surface. The filter material should conform to Class One, Type B permeable material as specified in Section 68 of the California Department of Transportation Standard Specifications, current edition. A clean ¾ inch crushed rock is also acceptable, provided filter fabric is used to separate the open graded gravel/rock from the surrounding soils. The top 12 inches of wall backfill should consist of a compacted soil cap. A filter fabric should be placed on top of the gravel filter material to separate it from the soil cap. A 4 inch diameter drain pipe should be installed near the bottom of the filter blanket with perforations facing down. The drainpipe should be underlain by at least 4 inches of filter-type material. An adequate gradient should be provided along the top of the foundation to discharge water that collects behind the retaining wall to a controlled discharge system.

The configuration of a long retaining wall generally does not allow for a positive drainage gradient within the perforated drain pipe behind the wall since the wall footing is generally flat with no gradient for drainage. Where this condition is present, to maintain a positive drainage behind the walls, we recommend that the wall drains be provided with a discharge to an appropriate non-erosive outlet a maximum of 50 feet on center. **In addition, if the wall drain outlets are temporarily stubbed out in front of the walls for future connection during home construction, it is imperative that the outlets be routed into the tight pipe area drainage system and not buried and rendered ineffective.**

Basement Wall Drainage: Based on our experience in the project area, excavation into bedrock to create a daylight basement condition may have the potential for creating moisture related problems within the underlying slab on grade areas of the daylight basement (i.e. wet slab conditions associated with seepage through bedrock fractures, perched groundwater, etc.). The following recommendations have been provided to mitigate the potential for the abovementioned moisture related issues.

The configuration of a long retaining wall generally does not allow for a positive drainage gradient within the perforated drain pipe behind the wall since the wall footings are generally flat with no gradient for drainage. Where this condition is present, to maintain positive drainage behind the walls, we recommend that the length of the wall drain be broken up into segments of 20 foot lengths that will allow for drainage outlets within the central portion of the drain segment. To accomplish this, we recommend that the perforated pipe be installed in contact with the top of the footing and sleeved with a tight pipe through the footing as detailed on Figure C-5, Appendix C. The drain should be installed in a trench and directed to a non-erosive outlet. Once the drain enters the footing, the perforated drain pipe should transition to a non-perforated rigid wall pipe. A second perforated pipe should be installed within the trench as detailed on Figure C-5, Appendix C. The trench should be backfilled with crushed rock up to finished pad grade so that it contacts

the crushed rock beneath the slab and functions as a slab underdrain system. The drain trenches should be excavated to a depth such that they are below any plumbing trenches, so that any water that may accumulate in those trenches can also be drained.

The final drainage configuration should be addressed prior to the completion of pad grading operations, so that a determination can be made, based on the geotechnical and/or geologic conditions observed, where installation of the wall drain outlets/slab underdrain system would be most beneficial. In addition, pre-excavation of the drainage trenches could be performed with the large grading equipment on the site. A representative from our firm should be present during these operations to provide additional consultation services as field conditions dictate.

Slab-on-Grade Construction

It is our opinion that soil-supported slab-on-grade floors could be used for the main floors of the structures, contingent on proper subgrade preparation. Often the geotechnical issues regarding the use of slab-on-grade floors include proper soil support and subgrade preparation, proper transfer of loads through the slab underlayment materials to the subgrade soils, and the anticipated presence or absence of moisture at or above the subgrade level. We offer the following comments and recommendations concerning support of slab-on-grade floors. The slab design (concrete mix, reinforcement, joint spacing, moisture protection, and underlayment materials) is the purview of the project Structural Engineer.

Slab Subgrade Preparation: All subgrades proposed to support slab-on-grade floors should be prepared and compacted to the requirements of engineered fill as discussed in the Site Grading and Improvements section of this report.

Slab Underlayment: As a minimum for slab support conditions, the slab should be underlain by a minimum 4 inch crushed rock layer and covered by a minimum 10-mil thick moisture retarding plastic membrane. An optional 1 inch blotter sand layer above the plastic membrane is sometimes used to aid in curing of the concrete in commercial structures. The blotter layer can become a reservoir for excessive moisture if inclement weather occurs prior to pouring the slab, excessive water collects in it from the concrete pour, or an external source of water enters above or bypasses the membrane. The membrane may only be functional when it is above the vapor sources. The bottom of the crushed rock layer should be above the exterior grade to act as a capillary break and not a reservoir, unless it is provided with an underdrain system. The slab design and underlayment should be in accordance with ASTM E1643 and E1745.

If the blotter sand layer is omitted (as may be required if slab design and construction is to be performed according to the 2016 Green Building Code), special wet curing procedures will be necessary. In all cases, development of appropriate slab mix design and curing procedures remains the purview of the project structural engineer.

Slab Moisture Protection: Due to the potential for landscape to be present directly adjacent to the slab edge/foundation or for drainage to be altered following our involvement with the project, varying levels of moisture below, at, or above the pad subgrade level should be anticipated. The slab designer should include the potential for moisture vapor transmission when designing the slab. Our experience has shown that vapor transmission through concrete is controlled through slab thickness as well as proper concrete mix design.

It should be noted that placement of the recommended plastic membrane, proper mix design, and proper slab underlayment and detailing per ASTM E1643 and E1745 will not provide a waterproof

condition. If a waterproof condition is desired, we recommend that a waterproofing expert be consulted for slab design.

Slab Thickness and Reinforcement: Geotechnical reports have historically provided minimums for slab thickness and reinforcement for general crack control. The concrete mix design and construction practices can additionally have a large impact on concrete crack control. All concrete should be anticipated to crack. As such, these minimums should not be considered to be stand-alone items to address crack control, but are suggested to be considered in the slab design methodology.

In order to help control the growth of cracks in interior concrete from becoming significant, we suggest the following minimums. Interior concrete slabs-on-grade not subject to heavy loads should be a minimum of 4 inches thick. A 4 inch thick slab should be reinforced. A minimum of No. 3 deformed reinforcing bars placed at 24 inches on center both ways for single-family residences and 18 inches on center both ways for multi-family structures, at the center of the structural section is suggested. Joint spacing should be provided by the structural engineer. Troweled joints recovered with paste during finishing or "wet sawn" joints should be considered every 10 feet on center. Expansion joint felt should be provided to separate floating slabs from foundations and at least at every third joint. Cracks will tend to occur at recurrent corners, curved or triangular areas and at points of fixity. Trim bars can be utilized at right angle to the predicted crack extending 40 bar diameters past the predicted crack on each side.

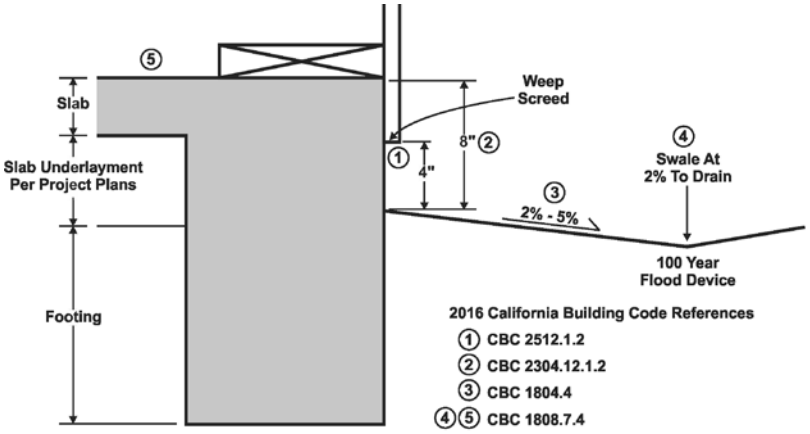
Vertical Deflections: Soil-supported slab-on-grade floors can deflect downward when vertical loads are applied, due to elastic compression of the subgrade. For design of concrete floors, a modulus of subgrade reaction of k = 150 psi per inch would be applicable for native soils and engineered fills.

Exterior Flatwork: Exterior concrete flatwork is recommended to have a 4 inch rock cushion. This could consist of vibroplate compacted crushed rock or compacted ¾ inch aggregate baserock.

If exterior flatwork concrete is against the floor slab edge without a moisture separator it may transfer moisture to the floor slab. Expansion joint felt should be provided to separate exterior flatwork from foundations and at least at every third joint. Contraction / groove joints should be provided to a depth of at least 1/4 of the slab thickness and at a spacing of less than 30 times the slab thickness for unreinforced flatwork, dividing the slab into nearly square sections. Cracks will tend to occur at recurrent corners, curved or triangular areas and at points of fixity. Trim bars can be utilized at right angle to the predicted crack extending 40 bar diameters past the predicted crack on each side.

Drainage Adjacent to Slabs: All grades should provide rapid removal of surface water runoff; ponding water should not be allowed on building pads or adjacent to foundations or other structural improvements (during and following construction). All soils placed against foundations during finish grading should be compacted to minimize water infiltration. Finish and landscape grading should include positive drainage away from all foundations. Section 1808.7.4 of the 2016 California Building Code (CBC) states that for graded soil sites, the top of any exterior foundation shall extend above the elevation of the street gutter at the point of discharge or the inlet of an approved drainage device a minimum of 12 inches plus 2 percent. If overland flow is not achieved adjacent to buildings, the drainage device should be designed to accept flows from a 100 year event. Grades directly adjacent to foundations should be no closer than 8 inches from the top of the slab (CBC 2304.12.1.2), and weep screeds are to be placed a minimum of 4 inches clear of soil grades and 2 inches clear of concrete or other hard surfacing (CBC 2512.1.2). From this

point, surface grades should slope a minimum of 2 percent away from all foundations for at least 5 feet but preferably 10 feet, and then 2 percent along a drainage swale to the outlet (CBC 1804.4). Downspouts should be tight piped via an area drain network and discharged to an appropriate non-erosive outlet away from all foundations.



Typical 2016 California Building Code Drainage Requirements

The above referenced elements pertaining to drainage of the proposed structures is provided as general acknowledgement of the California Building Code requirements, restated and graphically illustrated for ease of understanding. Surface drainage design is the purview of the Project Architect/Civil Engineer. Review of drainage design and implementation adjacent to the building envelopes is recommended as performance of these improvements is crucial to the performance of the foundation and construction of rigid improvements.

It should be noted that due to the Americans with Disabilities Act (ADA) requirements, design and construction of alternative site drainage configurations may be necessary, particularly for multi-family developments. In this case, design and construction of adequate drainage adjacent to foundations and slabs are essential to preserving foundation support and reducing the potential for wet slab related issues. A typical example of this condition occurs in commercial developments where the landscape grades are situated at the same elevation as the parking areas so as to not create a drop off between the grades. This condition subsequently results in flat grades between the building, landscape area, and parking lot which do not meet building code requirements.

Asphalt Concrete Pavement Design

We understand that asphalt pavements will be used for the associated roadways. The following comments and recommendations are given for pavement design and construction purposes. All pavement construction and materials used should conform to applicable sections of the latest edition of the California Department of Transportation Standard Specifications.

Subgrade Compaction: After installation of any underground facilities, the upper 8 inches of subgrade soils under pavements sections should be compacted to a minimum relative compaction of 95 percent based on the ASTM D1557 test method at a moisture content near or above optimum. Aggregate bases should also be compacted to a minimum relative compaction of 95 percent based on the aforementioned test method.

Subgrade Stability: All subgrades and aggregate base should be proof-rolled with a full water truck or equivalent immediately before paving, in order to evaluate their condition. If unstable subgrade conditions are observed, these areas should be overexcavated down to firm materials and the resulting excavation backfilled with suitable materials for compaction (i.e. drier native soils or aggregate base). Areas displaying significant instability may require geotextile stabilization fabric within the overexcavated area, followed by placement of aggregate base. Final determination of any required overexcavation depth and stabilization fabric should be based on the conditions observed during subgrade preparation.

Design Criteria: Critical features that govern the durability of a pavement section include the stability of the subgrade; the presence or absence of moisture, free water, and organics; the fines content of the subgrade soils; the traffic volume; and the frequency of use by heavy vehicles. Soil conditions can be defined by a soil resistance value, or "R-Value," and traffic conditions can be defined by a Traffic Index (TI).

Design Values: The following table provides recommended pavement sections based on the R-Value test (CTM 301) performed on a bulk sample representative of the materials expected to be exposed at subgrade, as well as our experience with similar materials in the area. R-values of 72 and 49 were determined for the silty SANDS tested in the Reference No. 1 report; however, due to the variability of onsite soils and the potential redistribution of material typically encountered during grading, we used an R-Value of 40 in our design.

Design values provided are based upon properly drained subgrade conditions. Although the R-Value design to some degree accounts for wet soil conditions, proper surface and landscape drainage design is integral in performance of adjacent street sections with respect to stability and degradation of the asphalt. If clay soils are encountered and cannot be sufficiently blended with non-expansive soils, we should review pavement subgrades to determine the appropriateness of the provided sections, and provide additional pavement design recommendations as field conditions dictate. Even minor clay constituents will greatly reduce the design R-Value.

The recommended design thicknesses presented in the following table were calculated in accordance with the methods presented in the Sixth Edition of the California Department of Transportation Highway Design Manual. A varying range of traffic indices are provided for use by the project Civil Engineer for roadway design.

Table 6: Asphalt Pavement Section Recommendations

Design Traffic Indices	Alternative Pavement Sections (Inches)	
	Asphalt Concrete *	Aggregate Base **
4.5	2.5 3.0	4.0 5.0
5.0	2.5 3.0	5.0 4.0
5.5	3.0 3.5	5.0 4.0
6.0	3.0 3.5	6.5 5.5
6.5	3.5 4.0	7.0 6.0
7.0	4.0 4.5	7.0 6.0

* Asphalt Concrete: must meet specifications for Caltrans Hot Mix Asphalt Concrete
** Aggregate Base: must meet specifications for Caltrans Class II Aggregate Base (R-Value = minimum 78)

Due to the redistribution of materials that occurs during mass grading operations, we should review pavement subgrades to determine the appropriateness of the provided sections.

Portland Cement Concrete Pavement Design

We understand that Portland cement concrete pavements may be considered for various aspects of exterior paving for the site. The American Concrete Institute (ACI) Concrete Pavement Design method (ACI 330R-08) was used for design of the exterior concrete (rigid) pavements at the site. The pavement thicknesses were evaluated based on the soil design parameters provided in the following table.

Table 7: Soil Parameters

Subgrade Soil Description	k, Modulus of Subgrade Reaction*	Base Course
Silty SAND	195 pci	6 inches

* Based on an R-Value of 40 as recommended above and correlated to a k-Value recommended by ACI 330R.

Based on the subgrade soil parameters shown in the above table, the recommended concrete thicknesses for various traffic descriptions are presented in the table below. The recommended thicknesses provided below assume the use of plain (non-reinforced) concrete pavements.

We recommend that the rigid pavement be placed on at least 6 inches of aggregate base compacted to at least 95 percent of the maximum dry density per the ASTM D 1557 test method. From a geotechnical perspective, contraction joints should be placed in accordance with the American Concrete Institute (ACI) recommendations which include providing a joint spacing about 30 times the slab thickness up to a maximum of 10 feet. The joint patterns should also divide the slab into nearly square panels. If increased joint spacing is desired, reinforcing steel should be installed within the pavement in accordance with ACI recommendations. Final determination of steel reinforcement configurations (if used within the pavements) remains the purview of the Project Structural Engineer.

Table 8: Concrete Pavement Section Recommendations

Category	ADTT*	Pavement Traffic Description	Thickness (inches)	
			3000 psi**	4000 psi**
A	1	Car parking areas and access lanes	5.0	4.5
A	10	Autos, pickups, and panel trucks only	5.5	5.0
B	25	Shopping center entrance and service lanes	6.0	5.5
B	300	Bus parking areas and interior lanes Single-unit truck parking areas and interior lanes	7.0	6.0
C	100	Roadway Entrances and Exterior Lanes	7.0	6.5
C	300		7.5	6.5
C	700		7.5	7.0

* Average Daily Truck Traffic
** 28-day concrete compressive strength

Drainage

In order to maintain the engineering strength characteristics of the soil presented for use in this Geotechnical Engineering Study Update, maintenance of the building pads will need to be performed. This maintenance generally includes, but is not limited to, proper drainage and control of surface and subsurface water which could affect structural support and fill integrity. A difficulty exists in determining which areas are prone to the negative impacts resulting from high moisture conditions due to the diverse nature of potential sources of water; some of which are outlined in the paragraph below. We suggest that measures be installed to minimize exposure to the adverse effects of moisture, but this will not guarantee that excessive moisture conditions will not affect the structure.

Some of the diverse sources of moisture could include water from landscape irrigation, annual rainfall, offsite construction activities, runoff from impermeable surfaces, collected and channeled water, and water perched in the subsurface soils on the bedrock horizon or present in fractures in the weathered bedrock. Some of these sources can be controlled through drainage features installed either by the owner or contractor. Others may not become evident until they, or the effects of the presence of excessive moisture, are visually observed on the property.

Some measures that can be employed to minimize the buildup of moisture include, but are not limited to proper backfill materials and compaction of utility trenches within the footprint of the proposed residential and multi-family structures; grout plugs at foundation penetrations; collection and channeling of drained water from impermeable surfaces (i.e. roofs, concrete or asphalt paved areas); installation of subdrain/cut-off drain provisions; utilization of low flow irrigation systems; education to the proposed homeowners of proper design and maintenance of landscaping and drainage facilities that they or their landscaper installs.

Crawlspace: This configuration has an elevated risk of moisture intrusion and collection. Provisions for surface drainage should be provided at the base of the crawlspace and if sufficient fall to the sides of the residence cannot be achieved, the basement wall drainage recommendations in this report should be implemented. The construction of a building pad subdrain up slope of the crawlspace could reduce the risk of moisture penetration; however, moisture could still be found on the crawlspace surface without efforts to provide a complete cutoff. Ventilation for the crawlspace should meet minimum code requirements as well as be uniformly spaced around the perimeter of the structure to the extent possible.

Building Pad Subdrain: It has been our experience that sites constructed within this area generally have an increased potential for moisture related issues related to water perched on the bedrock

horizon and/or present in the fractures of the bedrock as well as moisture transmission through utility trenches. To mitigate for the potential of these issues, subdrains can be constructed in addition to the drainage provisions provided in the 2016 CBC. Typical subdrain construction would include a 3 feet deep trench (or depth required to intercept the bottom of utility trenches) constructed as detailed on Figure C-6. The water collected in the subdrain pipe would be directed to an appropriate non-erosive outlet. We recommend that a representative from our firm be present during the subdrain installation procedures to document that the drain is installed in accordance with the observed field conditions, as well as to provide additional consultation as the conditions dictate.

As noted in the previous discussions, the moisture conditions may not manifest until after the site is developed. As such, any recommendations for the subdrain orientation and location to mitigate the moisture conditions can be provided on an as requested basis as the conditions arise. It should also be noted that similar moisture conditions may arise within crawlspace grades (particularly when located below other potential moisture sources), and may warrant similar mitigation measures. We recommend that the developer notify future owners of this potential.

Median and Roadway Landscaping Drainage: In developments built on relatively poor draining soils (i.e. shallow bedrock), prolonged water seepage into pavement sections can result in softening of subgrade soils and subsequent pavement distress. In addition, where shallow bedrock conditions are present, water can become perched on the relatively impermeable soil horizon and eventually inundate utility trench backfill. The variable support condition between native soils and compacted trench backfill materials, coupled with prolonged water exposure can lead to subsidence of trench backfill materials if bridging of trench backfill occurs during placement or natural jetting of soils into voids around pipes occurs. Joint utility trenches are generally more susceptible to the jetting issues due to the quantity of pipe placed in the trench.

It is anticipated that heavy landscape watering could enter and pond within the street aggregate base section as it permeates through the aggregate base under the sidewalks and/or curbs. Prolonged seepage within the pavement section could cause distress to pavements in heavy traffic areas. Some measures that can be employed to minimize the saturation of the subgrade and aggregate base materials include, but are not limited to, construction of cut-off drains or moisture barriers alongside the roadway adjacent to the roadway interface, construct of subdrains within landscape medians and installation of plug and drain systems within utility trenches. Due to the elusive and discontinuous nature of drainage related issues, a risk based approach should be determined by the developer based on consultation and discussions with the design professionals and the amount of protection of facilities that the developer may want to provide against potential moisture related issues.

Post Construction: All drainage related issues may not become known until after construction and landscaping are complete. Therefore, some mitigation measures may be necessary following site development. Landscape watering is typically the largest source of water infiltration into the subgrade. Given the soil conditions on site, excessive or even normal landscape watering may contribute to groundwater levels rising, which could contribute to moisture related problems and/or cause distress to foundations and slabs, pavements, and underground utilities, as well as creating a nuisance where seepage occurs. On foothill developments constructed with cut/fill pads on shallow bedrock conditions, seepage may not be apparent until post construction. In order to mitigate these conditions additional subdrainage measures may be necessary.

6.0 DESIGN REVIEW AND CONSTRUCTION MONITORING

The design plans and specifications should be reviewed and accepted by Youngdahl Consulting Group, Inc. prior to contract bidding. A review should be performed to determine whether the recommendations contained within this report are still applicable and/or are properly reflected and incorporated into the project plans and specifications.

Construction Monitoring

Construction monitoring is a continuation of the findings and recommendations provided in this report. It is essential that our representative be involved with all grading activities in order for us to provide supplemental recommendations as field conditions dictate. Youngdahl Consulting Group, Inc. should be notified at least two working days before site clearing or grading operations commence, and should observe the stripping of deleterious material, overexcavation of existing fills or loose/soft soils and provide consultation to the Grading Contractor in the field.

Low Impact Development Standards

Low Impact Development or LID standards have become a consideration for many projects in the region. LID standards are intended to address and mitigate urban storm water quality concerns. These methods include the use of Source Controls, Run-off Reduction and Treatment Controls. For the purpose of this report use of Run-off Reduction measures and some Treatment Controls may impact geotechnical recommendations for the project.

Youngdahl Consulting Group, Inc. did not perform any percolation or infiltration testing for the site as part of the Geotechnical Investigation. A review of soil survey and the data collected from test pits indicate that soils within the project are Hydrologic Soil Group C (slow permeability). Based on this condition, use of infiltration type LID methods (infiltration trenches, dry wells, infiltration basins, permeable pavements, etc.) should not be considered without addressing applicable geotechnical considerations/implications. As such, use of any LID measure that would require infiltration of discharge water to surfaces adjacent to structures/pavement or include infiltration type measures should be reviewed by Youngdahl Consulting Group, Inc. during the design process.

Post Construction Monitoring

As described in Post Construction section of this report, all drainage related issues may not become known until after construction and landscaping are complete. Youngdahl Consulting Group, Inc. can provide consultation services upon request that relate to proper design and installation of drainage features during and following site development. In addition, if the development includes use of LID measures maintenance of those features in conformance with the standard of practice and documentation from the designer will be necessary. The impact from infiltration or run-off reduction measures to engineered structures and foundations may not become apparent until after construction. We recommend that all LID measures be inspected and maintained as documented by the designer and if adverse impacts are noted related to the structure or site that Youngdahl Consulting Group, Inc. be retained to review the LID measure and provide additional consulting and options.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. This report has been prepared for the exclusive use of Stonehenge Springs, LLC and their consultants for specific application to the Stonehenge Springs project. Youngdahl Consulting Group, Inc. has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Youngdahl Consulting Group, Inc. makes no other warranty, expressed or implied.

2. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they be due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may cause this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three years without our review nor should it be used or is it applicable for any properties other than those studied.

3. Section [A] 107.3.4 of the 2016 California Building Code states that, in regard to the design professional in responsible charge, the building official shall be notified in writing by the owner if the registered design professional in responsible charge is changed or is unable to continue to perform the duties.

   WARNING: Do not apply any of this report's conclusions or recommendations if the nature, design, or location of the facilities is changed. If changes are contemplated, Youngdahl Consulting Group, Inc. must review them to assess their impact on this report's applicability. Also note that Youngdahl Consulting Group, Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of this report's subsurface data or engineering analyses without the express written authorization of Youngdahl Consulting Group, Inc.

4. The analyses and recommendations contained in this report are based on limited windows into the subsurface conditions and data obtained from subsurface exploration. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any variations or undesirable conditions be encountered during the development of the site, Youngdahl Consulting Group, Inc. will provide supplemental recommendations as dictated by the field conditions.

5. The recommendations included in this report have been based in part on assumptions about strata variations that may be tested only during earthwork. Accordingly, these recommendations should not be applied in the field unless Youngdahl Consulting Group, Inc. is retained to perform construction observation and thereby provide a complete professional geotechnical engineering service through the observational method. Youngdahl Consulting Group, Inc. cannot assume responsibility or liability for the adequacy of its recommendations when they are used in the field without Youngdahl Consulting Group, Inc. being retained to observe construction. Unforeseen subsurface conditions containing soft native soils, loose or previously placed non-engineered fills should be a consideration while preparing for the grading of the property. It should be noted that it is the responsibility of the owner or his/her representative to notify Youngdahl Consulting Group, Inc., in writing, a minimum of 48 hours before any excavations commence at the site.

6. Our experience has shown that vapor transmission through concrete is controlled through proper concrete mix design. As such, proper control of moisture vapor transmission should be considered in the design of the slab as provided by the project architect, structural or civil engineer. It should be noted that placement of the recommended plastic membrane, proper mix design, and proper slab underlayment and detailing per ASTM E1643 and E1745 will not provide a waterproof condition. If a waterproof condition is desired, we recommend that a waterproofing expert be consulted for slab design.

7. Following site development, additional water sources (i.e. landscape watering, downspouts) are generally present. The presence of low permeability materials can prohibit rapid dispersion of surface and subsurface water drainage. Utility trenches typically provide a conduit for water distribution. Provisions may be necessary to mitigate adverse effects of perched water conditions. Mitigation measures may include the construction of cut-off systems and/or plug and drain systems. Close coordination between the design professionals regarding drainage and subdrainage conditions may be warranted.

   Seepage may be observed emanating from the cut slopes following their excavation during the following rainy season or following development of the areas above the cut. Generally this seepage is not enough flow to be a stability issue to the cut slope, but may be an issue for the owner of the lot at the base of the cut from a surface drainage and standing water (damp spot) standpoint. This amount of water is generally collected easily with landscaping drainage, surface drainage at the toe of the slope, or subsurface toe drains. Recommendations may be provided at the time of observed seepage; however, we recommend that the developer of the property disclose this possibility to future owners.

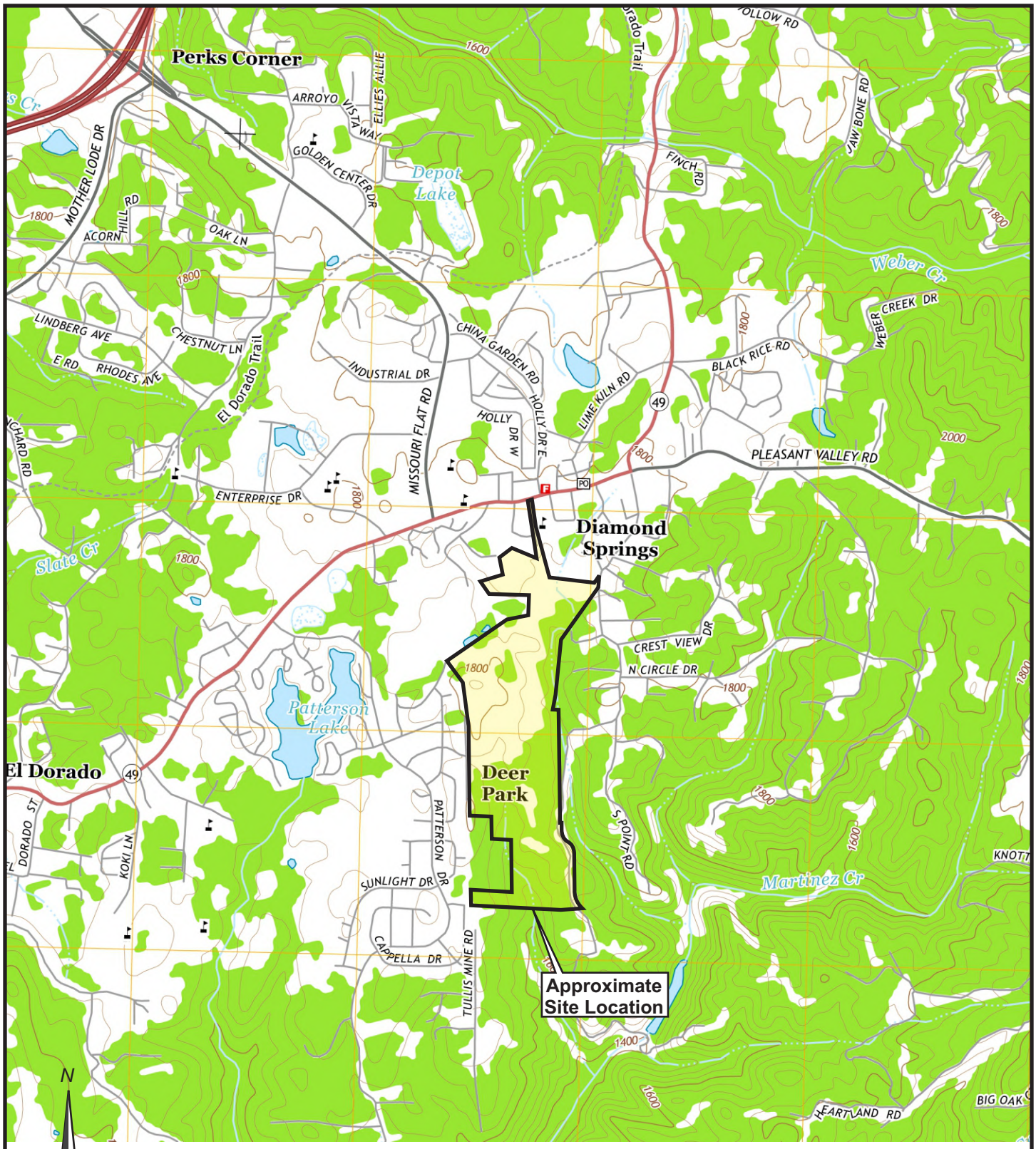
Table 9: Checklist of Recommended Services

Item Description		Recommended	Not Anticipated
1	Provide foundation design parameters	Included	
2	Review grading plans and specifications	✓	
3	Review foundation plans and specifications	✓	
4	Observe and provide recommendations regarding demolition		✓
5	Observe and provide recommendations regarding site stripping	✓	
6	Observe and provide recommendations on moisture conditioning removal, and/or recompaction of unsuitable existing soils	✓	
7	Observe and provide recommendations on the installation of subdrain facilities	✓	
8	Observe and provide testing services on fill areas and/or imported fill materials	✓	
9	Review as-graded plans and provide additional foundation recommendations, if necessary	✓	
10	Observe and provide compaction tests on storm drains, water lines and utility trenches	✓	
11	Observe foundation excavations and provide supplemental recommendations, if necessary, prior to placing concrete	✓	
12	Observe and provide moisture conditioning recommendations for foundation areas and slab-on-grade areas prior to placing concrete		✓
13	Provide design parameters for retaining walls	Included	
14	Provide finish grading and drainage recommendations	Included	
15	Provide geologic observations and recommendations for keyway excavations and cut slopes during grading	✓	
16	Excavate and recompact previous test pits within structural areas	✓	

APPENDIX A

Field Study

Vicinity Map
Site Plan



Scale: 1:24,000

BASE MAP REFERENCE: *U.S.G.S. 7.5 Minute Topographic Series, Placerville Quadrangle, Dated 2015*

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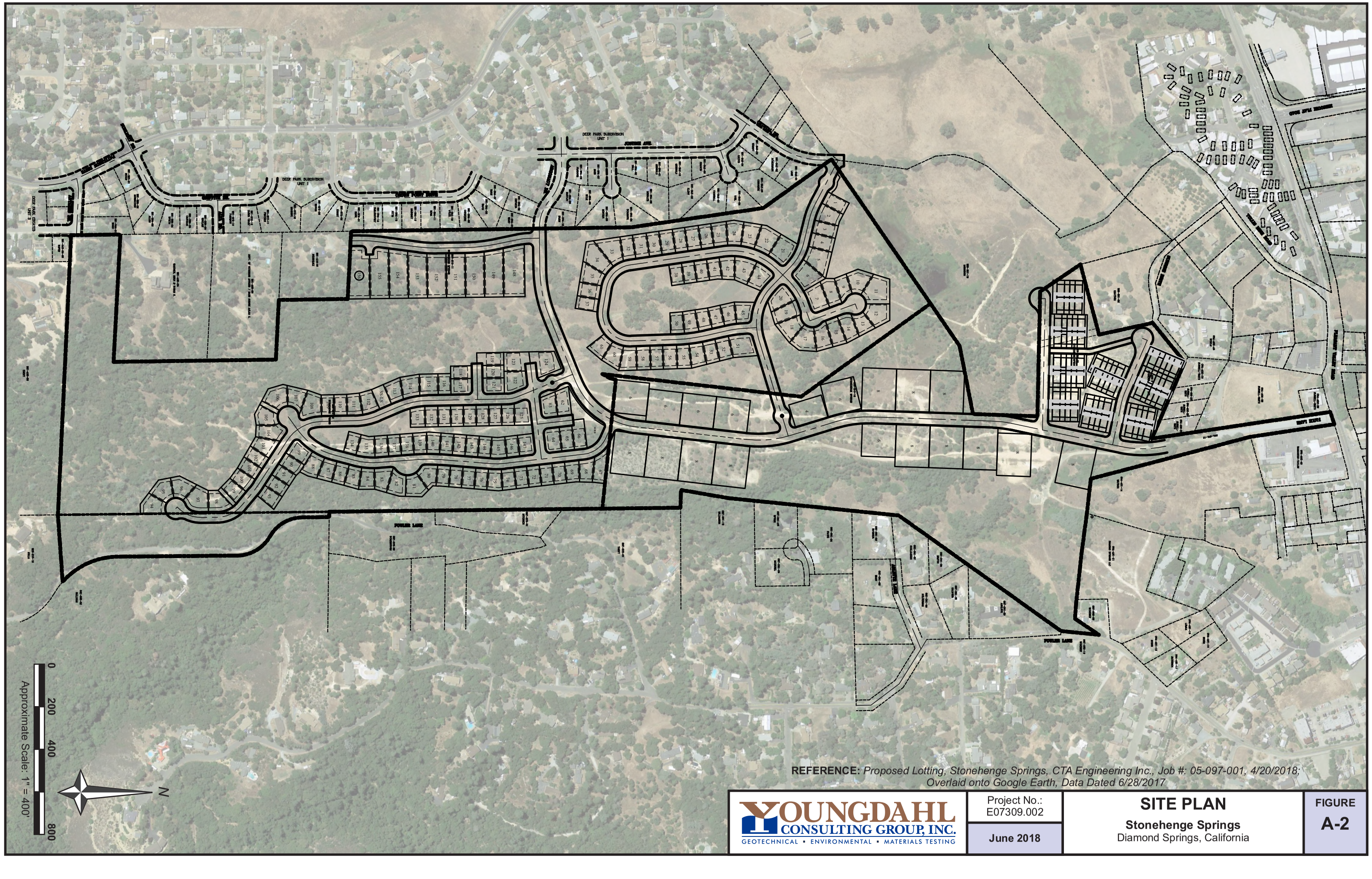
Project No.: E07309.002

June 2018

VICINITY MAP

Stonehenge Springs
Diamond Springs, California

FIGURE
A-1



REFERENCE: *Proposed Lotting, Stonehenge Springs, CTA Engineering Inc., Job #: 05-097-001, 4/20/2018; Overlaid onto Google Earth, Data Dated 6/28/2017*

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Project No.: E07309.002

June 2018

SITE PLAN

Stonehenge Springs
Diamond Springs, California

FIGURE
A-2

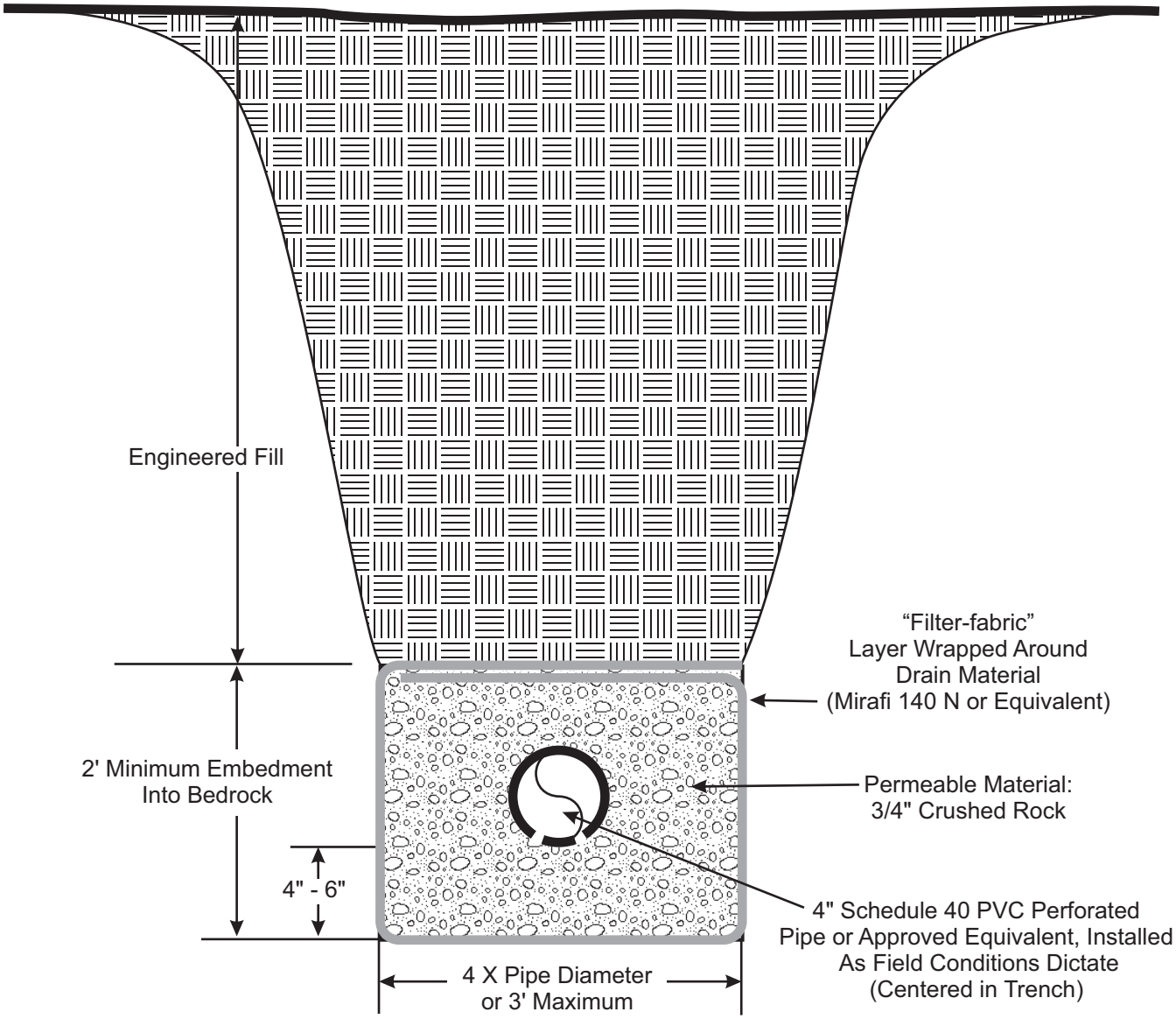
APPENDIX B

Details

Canyon Style Drain
Keyway and Bench with Drain
Plug and Drain
Site Wall Drainage
Basement Wall Drainage
Subdrain

Print to PDF to Flatten Form Fields

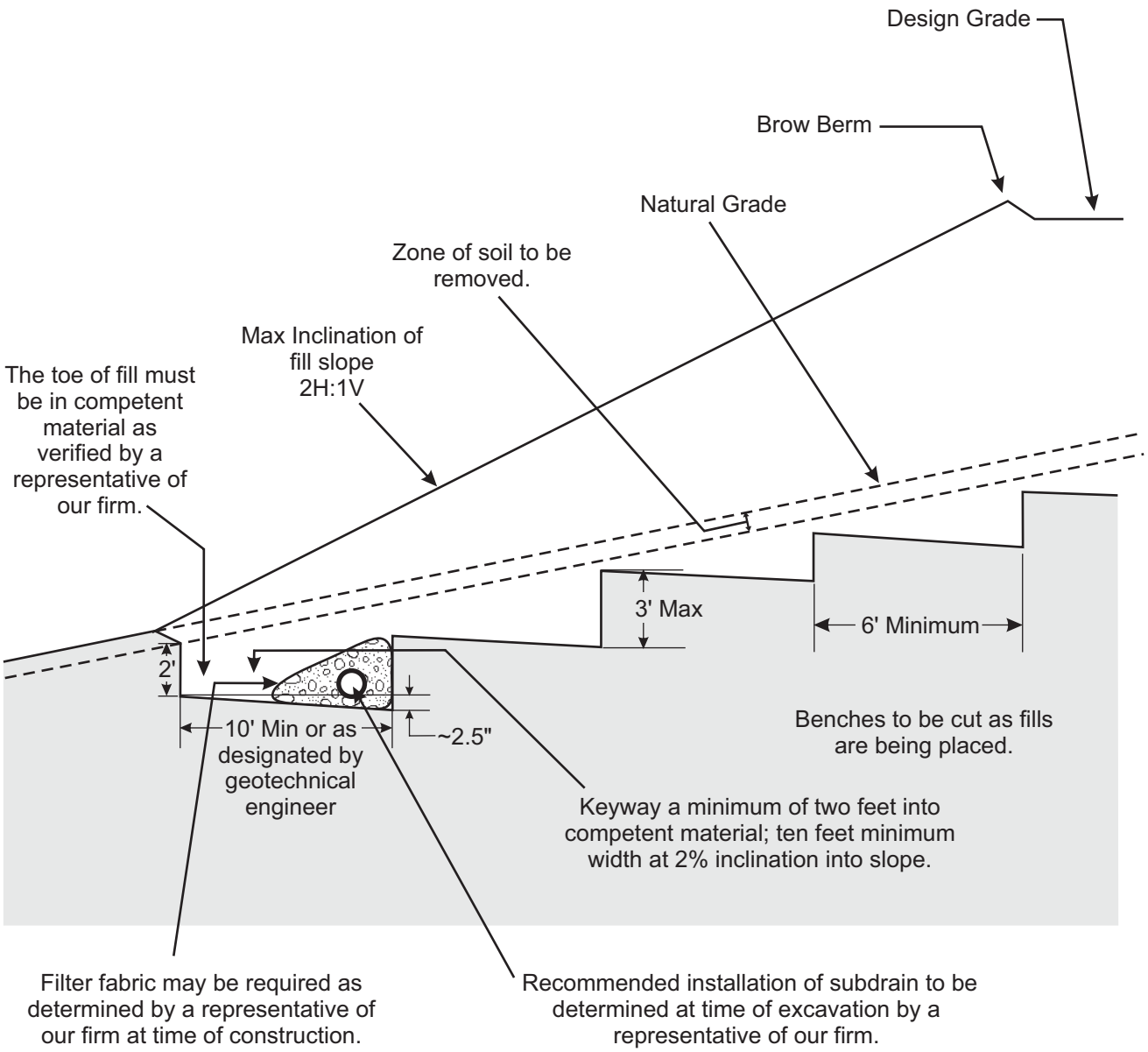
Canyon Drain Installation
(Typical)



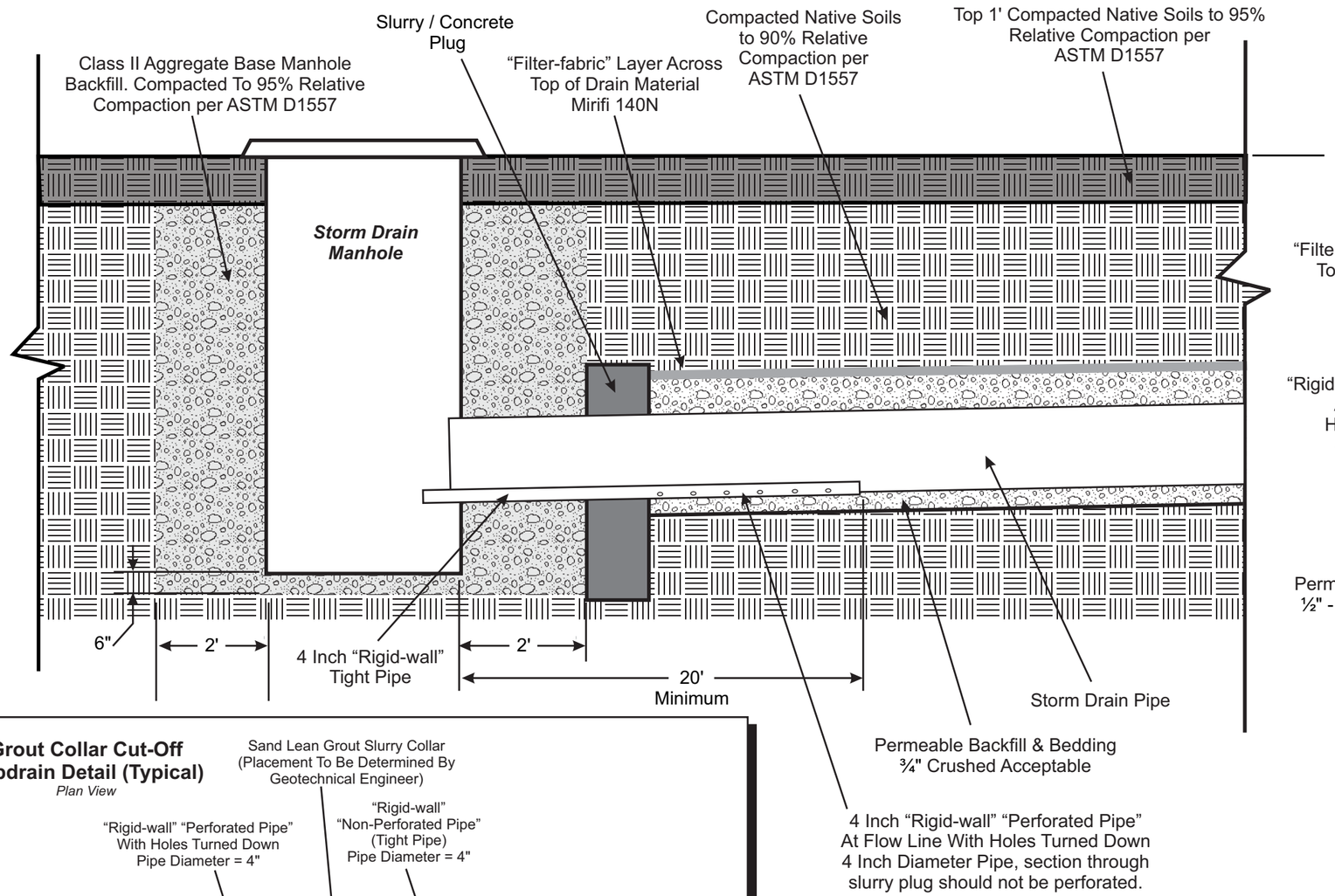
YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 June 2018	**CANYON STYLE DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	FIGURE **B-1**

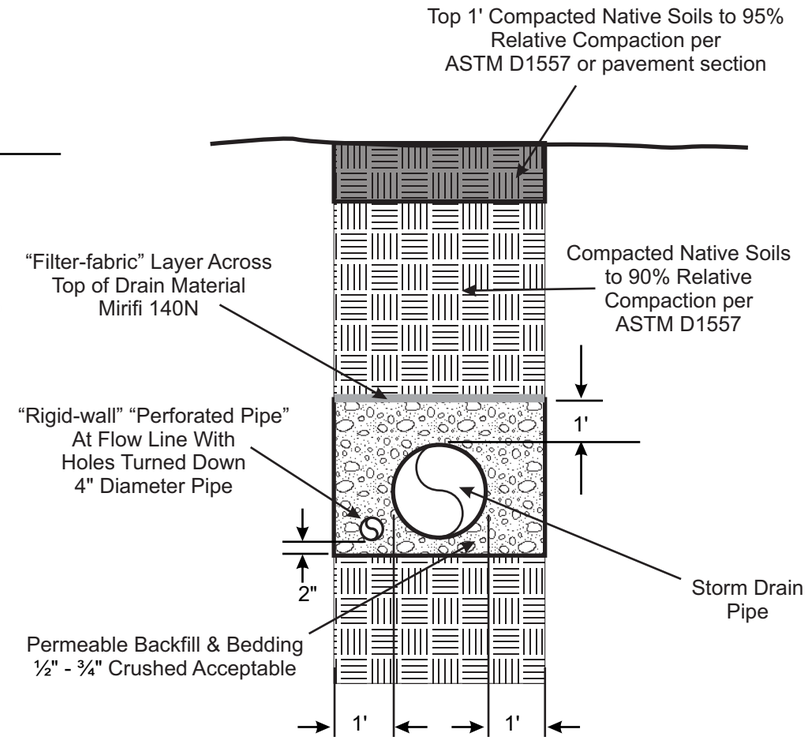
PLACEMENT OF FILL ON NATURAL SLOPE
(Typical)

All keyways should be observed and approved prior to placement of fill.
A keyway is required by CBC for fills on natural slopes of 5H:1V or steeper.



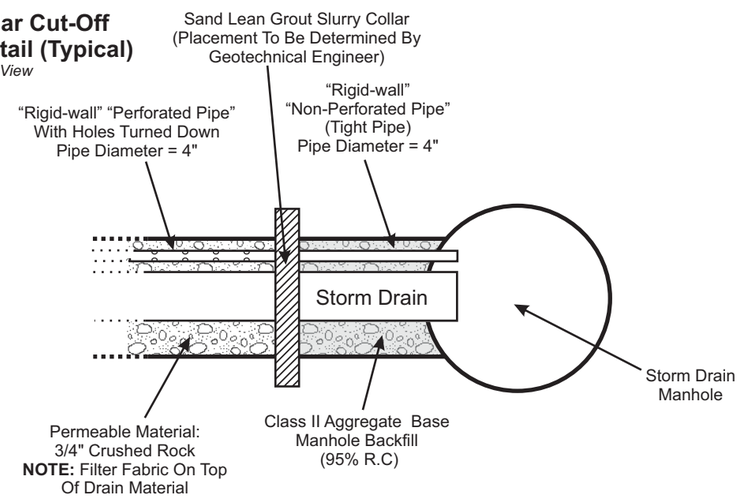
YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002	**KEYWAY & BENCH WITH DRAIN**	**FIGURE**
	June 2018	**Stonehenge Springs** Diamond Springs, California	**B-2**





Grout Collar Cut-Off Subdrain Detail (Typical)

Plan View



Notes: *1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.*
2. Washed clean permeable material.
3. Slurry collar to extend into trench sidewalls and to top of pipe envelope.

Notes: *Slope trench and "rigid-wall" pipes at least 1% gradient to drain.*

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Project No.: E07309.002

June 2018

TYPICAL STORM DRAIN / SUB-DRAIN DETAIL

Stonehenge Springs

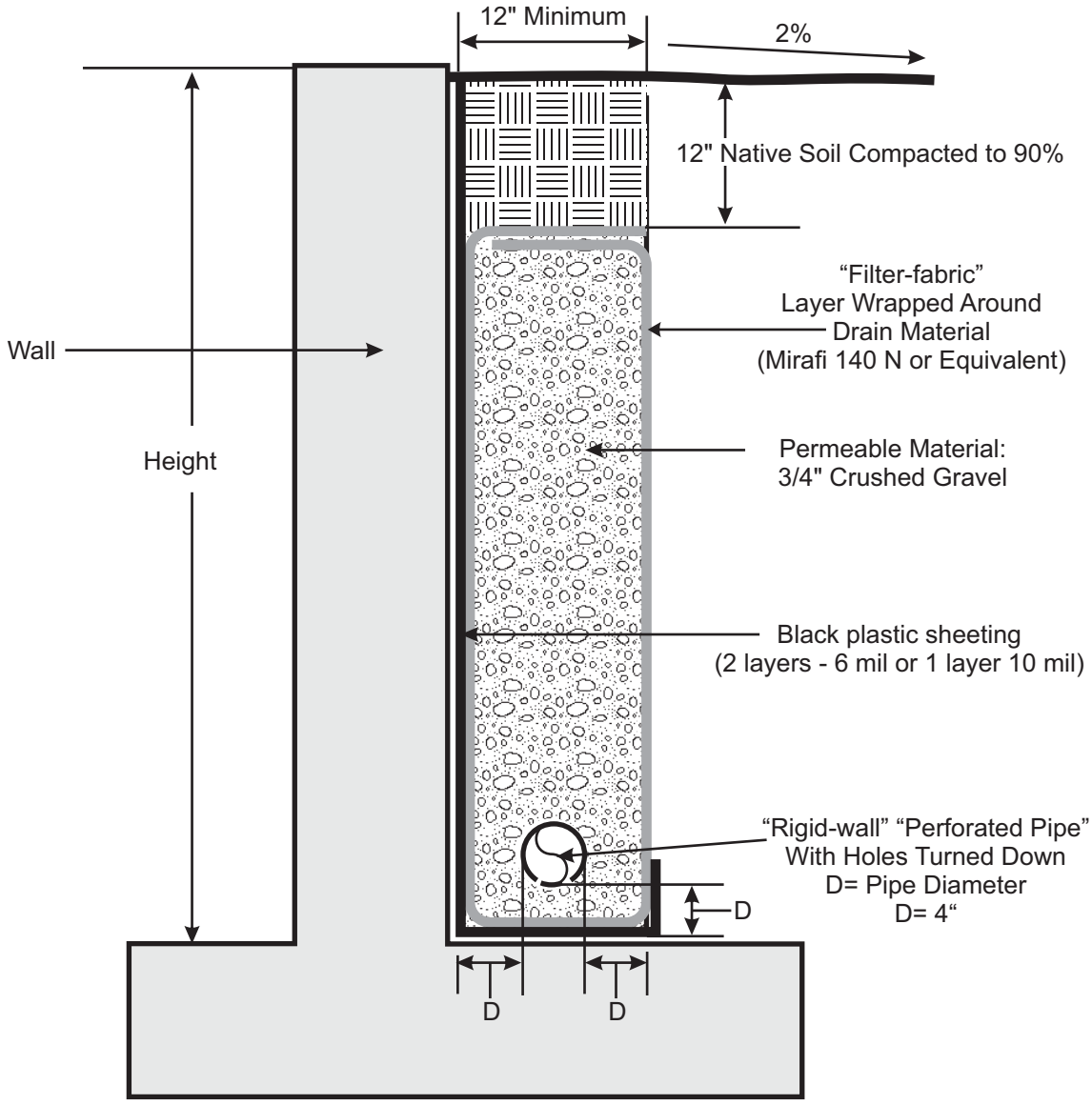
Diamond Springs, California

FIGURE

B-3

Retaining Wall With "Perforated Pipe Sub-Drain"

(Typical Cross Section)

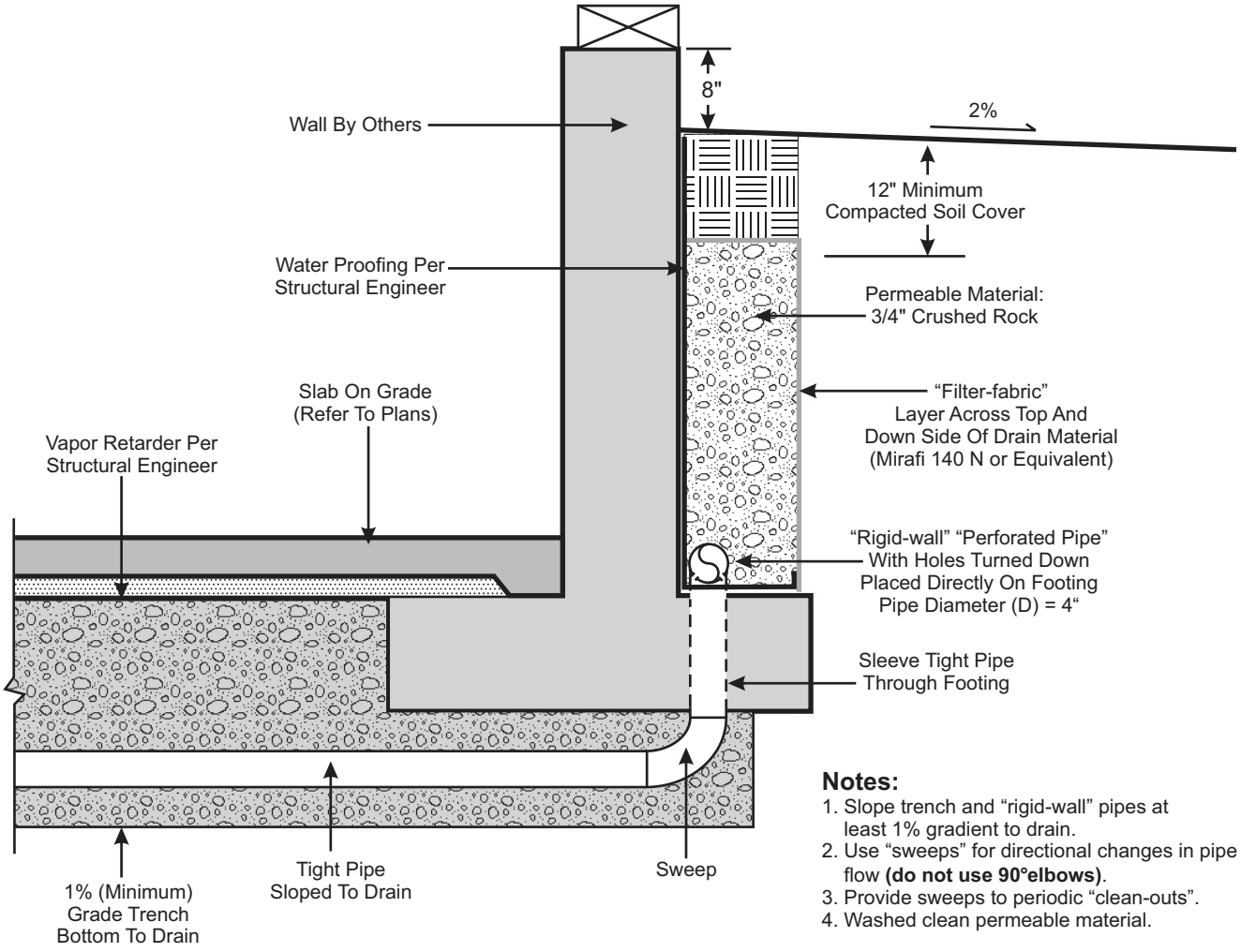


Notes:
1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain to an appropriate outfall area away from residence.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide periodic "clean-outs".
4. Washed clean permeable material.

Not To Scale

YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**RETAINING WALL DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-4**

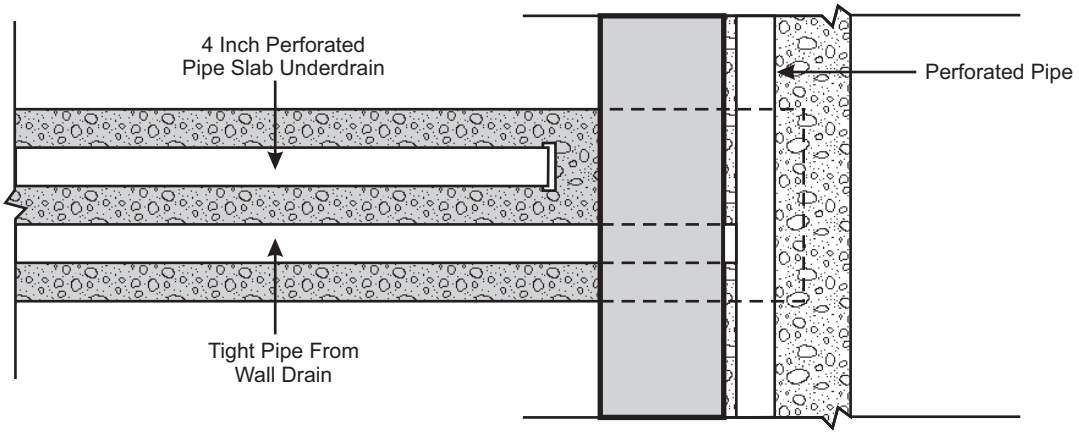
Profile View
(Typical)



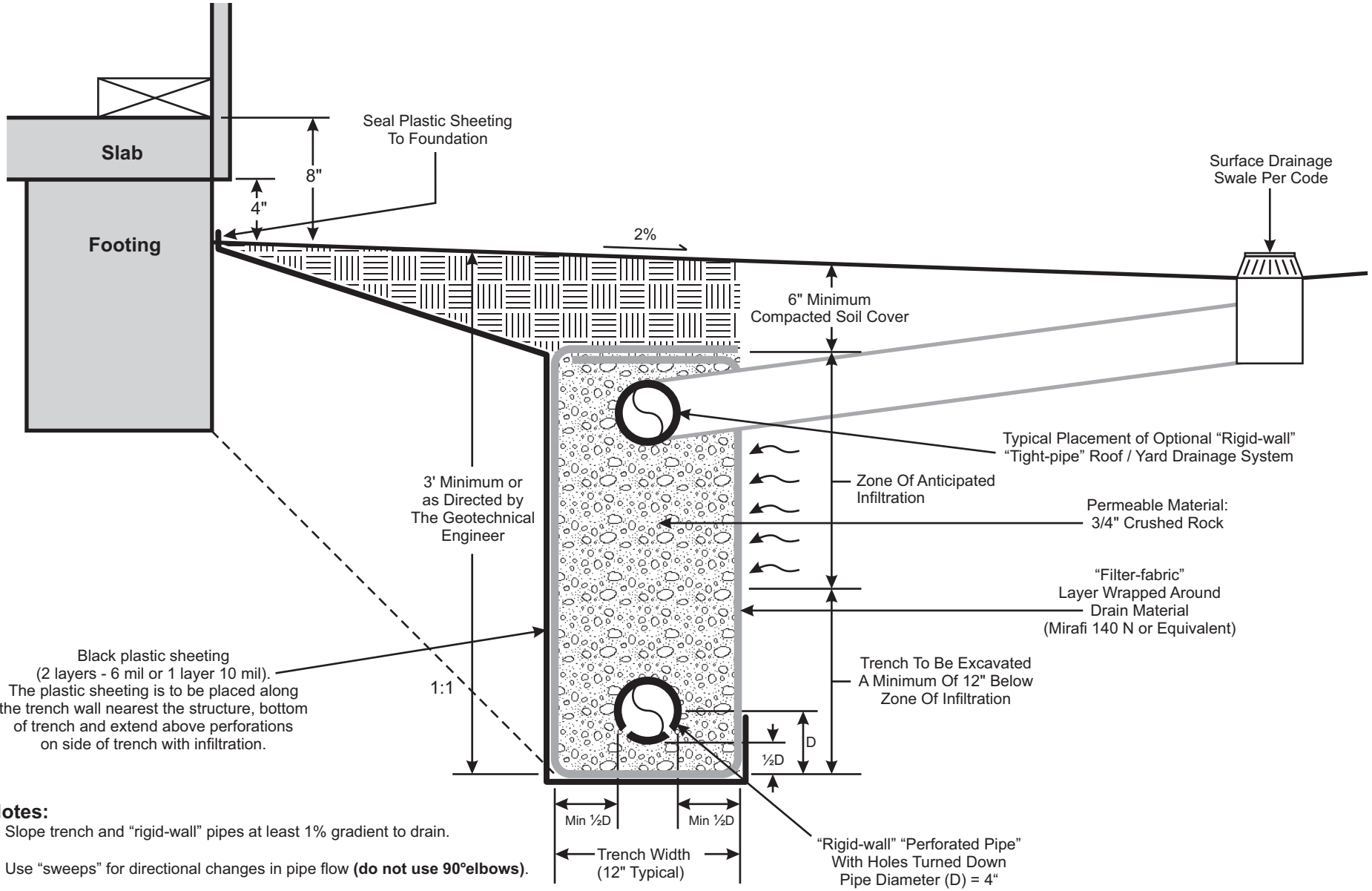
Notes:

1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide sweeps to periodic "clean-outs".
4. Washed clean permeable material.

Plan View
(Typical)



YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**BASEMENT STEMWALL DRAIN** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-5**



Notes:

1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide sweeps to periodic "clean-outs".
4. Washed clean permeable material.

YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**SUB-DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-6**

Appendix F
Hazards & Hazardous Materials



State Route 49/Pleasant Valley Road
at Faith Lane Project



Initial Site Assessment

State Route 49/Pleasant Valley Road
at Faith Lane Project
Diamond Springs, California

April 2019

Caltrans

EL DORADO COUNTY
CALIFORNIA

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Initial Site Assessment

State Route 49/Pleasant Valley Road
at Faith Lane Project
Diamond Springs, California

April 2019

STATE OF CALIFORNIA
Department of Transportation

Approved by: _____ Date: _____

Andrew Garber
Deputy Director Engineering
County of El Dorado
Department of Transportation

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State Route 49/Pleasant Valley Road at Faith Lane Project Draft - Initial Site Assessment

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APPENDIX A - Regulatory Records Radius Report

APPENDIX B - Historical Aerial Photographs, Topographic Maps, Fire Insurance Map, City Directories, and FEMA Flood Maps

Figures

Figure 1: Location Map 3
Figure 2: Project Map 4

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SECTION 1.0
Executive Summary

This Initial Site Assessment (ISA) was conducted on behalf of Caltrans and Stonehenge Springs, LLC (Stonehenge) for the proposed State Route 49/Pleasant Valley Road at Faith Lane Project (SR-49 project) located at the intersection of State Route 49/Pleasant Valley Road and Faith Lane in Diamond Springs in El Dorado County, California (see **Figure 1**). This SR-49 project would be constructed in conjunction with a proposed Stonehenge residential development along Faith Lane to the south of SR-49.

This ISA identifies Recognized Environmental Conditions (RECs) for the project site that may adversely affect roadway construction or right-of-way acquisition. This ISA was conducted in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice E 1527-13, which describes the standard practice for conducting assessments. This ISA includes a summary of the site reconnaissance conducted on January 10, 2019, a review of environmental databases, and a review of historical data sources. A REC is defined by ASTM Practice E 1527-13 as: "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The SR-49 Project evaluates four potential realignments of the intersection of Faith Lane with State Route 49 to accommodate ingress/egress to/from the aforementioned proposed residential development and to improve traffic flow in Diamond Springs. The proposed work would result in less than 2 feet of excavation with the exception of some utility trenching that may be down to 4 feet below grade. The four options are collectively located within the red outlined area shown on **Figure 2** and listed below. The outlined area provides for a suitable buffer areas extending up to about 50 feet from either side of the likely edge-of-pavement of the various options.

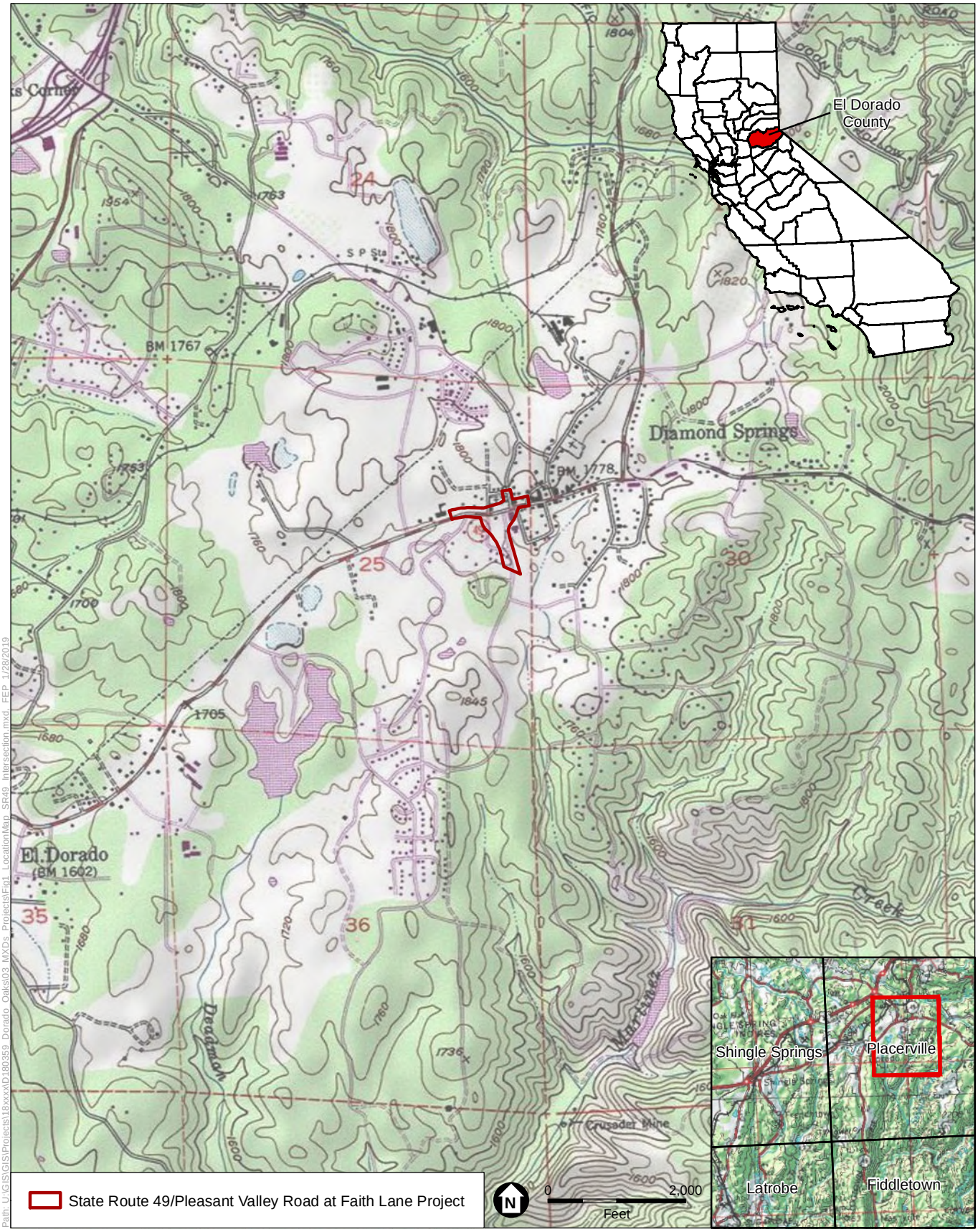
- Option A: a four-way roundabout at the intersection of China Garden Road and SR-49 to the east of Faith Lane.
- Option B: a three-way roundabout between Silver Drive and Faith Line at SR-49.
- Option C: a signalized T-shaped intersection at Faith Lane and SR-49.
- Option D: a signalized T-shaped intersection at Silver Drive and SR-49.

Depending on the selected option, the project would take place on some combination of parts of 13 parcels, one of which appears on the searched regulatory agency records as a former leaking underground storage tank (LUST) site. One former service station was previously located at 493 Main Street (now referred to as Pleasant Valley Road and/or State Route 49) on APN 054-490-04 on the northeast corner of State Route 49 and China Garden Road. Two 500-gallon gasoline underground storage tanks (USTs) were removed in 1992 and the Regional Water Quality Control Board (RWQCB) issued a No Further Action (NFA) letter in 1996. However, the NFA letter states that contaminated soil and groundwater are present along the south side of the former service station site extending to some unknown distance beneath State Route 49 and possibly under the footprint of the project site, depending on the selected option. No map of the site was provided. It is unknown whether the contamination extends to beneath the project site and there is no definitive visual indication of the former UST locations. **This is considered an REC because excavation for the project close to or under State Route 49 may encounter contaminated soil and groundwater**.

Various businesses and residences are located within the footprint of the four options, but none are listed on regulatory records as having violations or hazardous materials spoils, leaks, or releases. The various businesses are small commercial retail businesses that would use small quantities of cleaning solvents, and other small quantities of chemicals specific to the particular business. None of the businesses would be expected to use large quantities of hazardous materials and no USTs, above-ground storage tanks, hazardous materials containers, soil or pavement staining indicative of chemical spills, or stressed vegetation was observed.

The road sides do not have standard curbs and gutters. Most drainage is to dirt shoulders or unlined ditches. Some occasional trash was observed in the ditches and shoulder areas; however, no containers, staining indicative of chemical releases, or stressed vegetation was observed. The trash and debris are considered a *de minimus* condition because the materials can readily be recycled or disposed of at any municipal (Class III non-hazardous waste) landfill.

Although not an ASTM 1527 Phase I assessment consideration, it should be noted that if older structures that predate the 1970s US EPA ban on asbestos-containing materials (ACM) or lead-based paint (LBP) need to be removed (e.g., the 1877 Carpenter Building on the southwest corner of State Route 49 and Faith Lane), those older structures may contain ACM and/or LBP that would require surveying and removal by state-licensed professional as hazardous materials. In addition, various underground utilities were noted within and along the sides of most road segments. Construction activities would need to account for these utilities. Finally, soil along the sides of the roadways may have concentrations of aerially-deposited lead above action levels and would require investigation and if present above regulatory action levels, management as a hazardous material.

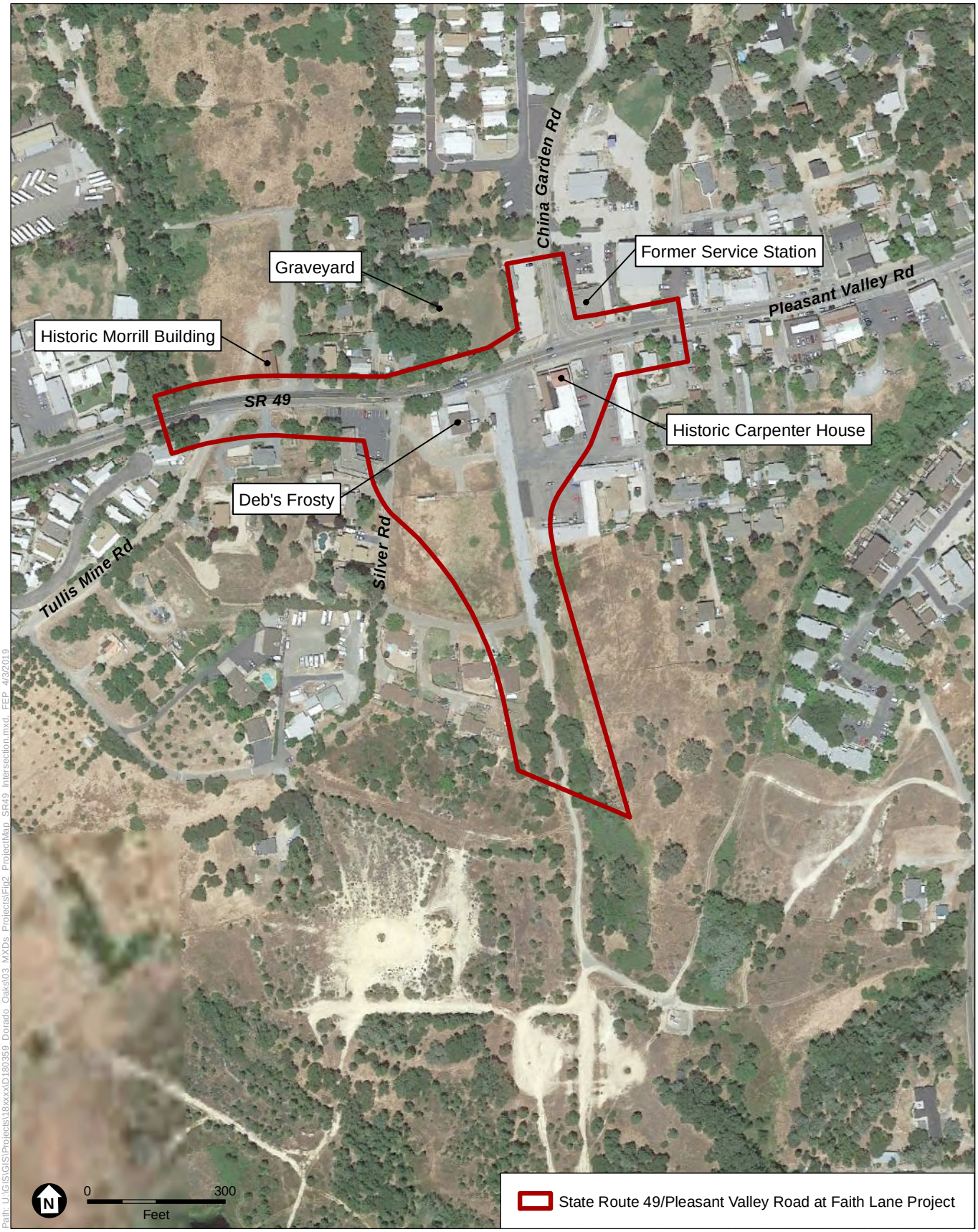


SOURCE: USGS 7.5' Topo Quad (Placerville, 1950); ESA, 2019

State Route 49/Pleasant Valley Road at Faith Lane Project

Figure 1
Location Map

ESA



SOURCE: Google (Imagery date June 25, 2018); ESA, 2019

State Route 49/Pleasant Valley Road at Faith Lane Project

Figure 2
Project Map

ESA

SECTION 2.0
Introduction

2.1 Purpose, Standards, and Definitions

Environmental Science Associates (ESA) conducted this Initial Site Assessment (ISA) for the proposed SR-49 project located in Diamond Springs in El Dorado County, California. This ISA was conducted in accordance with ESA's scope of work with Stonehenge Springs, LLC dated November 11, 2018. In addition, this ISA uses relevant guidance from the Caltrans *Standard Environmental Reference, Volume 1 Guidance for Compliance, Section 3 Topics, Chapter 10 - Hazardous Materials, Hazardous Waste, and Contamination, Initial Site Assessment*, last updated June 21, 2016, and the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13). This ISA is focused on and limited to identifying potential contamination sources or issues at or within 1/8-mile of the project site because of the limited footprint of the proposed project activities.

Three types of Recognized Environmental Conditions (RECs) are defined by the ASTM E1527-13, as listed below. The term Recognized Environmental Conditions (REC) means:

- "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

In addition, the updated ASTM E1527-13 defined the two additional categories cited below.

- The term Historical Recognized Environmental Conditions (HREC) means: "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Initial Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Initial Site Assessment

is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."

For a past REC to be considered an HREC it must:

- Have already been remediated (or meet current standards without remediation);
- Not require use restrictions or engineering controls (e.g., cap, subslab depressurization system); and
- Meet current standards.

If the REC has use restrictions or engineering controls (e.g., cap, subslab depressurization system), then the REC may be designated as a Controlled Recognized Environmental Condition (CREC), as defined below. Unlike HRECs, a CREC will be listed in the conclusions section of the Phase I assessment, along with other RECs. The purpose of this new category is to bring continuing obligations such as use restrictions, maintenance requirements, reporting requirements to the forefront. The term Controlled Recognized Environmental Conditions (CREC) means:

"A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Initial Site Assessment report, and as a recognized environmental condition in the conclusions section of the Initial Site Assessment report."

RECs, HRECs, and CRECs are not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

2.2 Scope of Services

The following sections describe ESA's work scope:

Section 2, *Introduction, Standards, and Definitions*, includes a discussion of the purpose for performing the ISA; the standards and definitions used for the ISA; and the significant assumptions and limitations.

Section 3, *Site Description*, compiles information concerning the location, current and proposed use, a description of any structures and improvements at the time of ESA's assessment, and adjoining property uses.

Section 4, *Records Review and Site Reconnaissance*, includes ESA's review of the Cortese List databases available from the federal, state, and local regulatory agencies regarding hazardous

materials use, storage, or disposal at or adjacent to the bridge. Applicable information is summarized and copies of relevant documents are included in the appendices of this report. Historical aerial photographs and topographic maps are reviewed for indications of historical environmental conditions. In addition, the Site Reconnaissance, describing ESA's observations during reconnaissance of the project area, was keyed to sites identified during the records review. The methodology used and limiting conditions are described herein.

Section 5, *Findings and Opinions*, presents ESA's findings and professional opinions regarding the information contained in this report. It provides ESA's conclusions regarding the presence of RECs, HRECs, and CRECs connected with the bridge and data gaps, if any, that could affect the recognition of RECs.

Section 6, *Report Authors and Signatures*, provides the signatures of the qualified personnel that conducted this assessment.

Section 7, *References*, is a summary of the resources used to compile this report that are not already included in the Appendices.

The appendices contain certain pertinent documentation regarding the parcels. Appendices A and B contain the regulatory agency database search results report, historical aerial photographs and topographic maps, fire insurance map and city directory search results, and the permit history. No interviews of site owners were conducted for this assessment because the project footprint is on public roads and does not have any operations that would use hazardous materials. Instead, this ISA relied on the project design documents prepared for this project (CTA, 2018), the site reconnaissance, and the regulatory records search (GeoSearch, 2018).

2.3 Limitations and Exceptions

No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with a property. Conformance of this limited ISA with ASTM E1527-13 reduces, but does not eliminate, uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with the subject property. While ESA has made every effort to discover and interpret available information regarding the bridge within the time available, some potential always remains for undiscovered contamination to be present. ESA's report is a best-efforts collection and interpretation of available information, and cannot be considered wholly conclusive. This report and the associated work were provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This is in lieu of all warranties, expressed or implied. No other warranty is expressed or implied.

This limited ISA is based primarily on a database review and a site reconnaissance of accessible areas. This limited ISA does not include "non-scope issues" as specified by ASTM E1527-13, such as invasive[1] surveys for the presence of the following items on or in the vicinity of the subject property: asbestos-containing materials, poly-chlorinated biphenyls (PCBs), radon, indoor

[1] Invasive surveys include sampling of materials.

air quality, lead-based paint analysis, lead in drinking water, regulatory compliance, and high voltage lines.

The conclusions presented are professional opinions based solely upon indicated data described in this report, visual site and vicinity observations, and the interpretation of the available historical information and documents reviewed, as described in this report. Unless ESA has actual knowledge to the contrary, information obtained from interviews or provided to ESA is assumed to be correct and complete. ESA does not assume any liability for information that was misrepresented to ESA by others or for items not visible, accessible, or present on or at the bridge during the time of the site reconnaissance. The conclusions are intended exclusively for the purpose outlined herein and the site location and project indicated. Any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of the user.

Opinions and recommendations presented herein apply to the site conditions existing at the time of this limited ISA and cannot necessarily apply to site changes of which ESA is not aware and has not had the opportunity to evaluate. Changes in the conditions of the bridge may occur with time due to natural processes or the works of man on the property or adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond ESA's control. Opinions and judgments expressed herein are based on ESA's understanding and interpretation of current regulatory standards, and should not be construed as legal opinions.

SECTION 3.0
Site Description

3.1 General Setting and Location

The SR-49 Project area consists SR-49/Pleasant Valley Road (also referred to a Main Street), the northern portion of Faith Lane, possibly the northern portion of Silver Drive, possibly the southern portion of China Garden Road, along with some portions of the areas adjacent to the roadways (**Figures 1 and 2**). Some of these adjacent areas are occupied by buildings. The local area is a mix of residential, rural, commercial/retail land uses, and one cemetery.

3.2 Project Description

The SR-49 Project would construct one of four potential realignments of the intersection of Faith Lane with State Route 49 to improve traffic flow in Diamond Springs. The four options are within the red area shown on **Figure 2** and listed below. The outlined area provides for a suitable buffer areas extending up to about 50 feet from either side of the likely edge-of-pavement of the various options.

- Option A: a four-way roundabout at the intersection of China Garden Road/SR-49, to the east of Faith Lane.
- Option B: a three-way roundabout between Silver Drive and Faith Line at SR-49.
- Option C: a signalized T-shaped intersection at Faith Lane/SR-49.
- Option D: a signalized T-shaped intersection at Silver Drive/SR-49.

The proposed work would result in less than 2 feet of excavation with the exception of some utility trenching that may be to 4 feet below grade. Depending on the selected option, the project would take place on some combination of the parcels listed below in **Table 3-1**. The project would construct either a round-about or a typical signalized intersection; standard sidewalks, curbs, and gutters; and underground utility corridors. Depending on the selected option, some buildings may be removed.

TABLE 3-1
PARCELS AND CONDITIONS

APN	Existing Use
	North of SR 49
054-371-19	Historic Morrill Building ; mostly undeveloped
054-371-20	Residential
054-371-05	Residential
054-372-03	Cemetery
054-372-02	Cemetery
054-372-04	El Dorado County Ambulance JPA building, parking lot covering most of parcel
054-490-04	Gust Bros. Building.; restaurant; dentist
	South of SR 49
054-402-37	Residential
054-402-47	Diamond Springs Plaza; various retail outlets
054-402-39	Deb's Frosty Restaurant
054-402-40	Diamond Village; various retail outlets; historic Carpenter building
054-402-49	One portable storage shed; mostly undeveloped
054-402-18	Paved road

SOURCE: El Dorado County, 2018

3.3 Project Need

The existing intersection at Faith Lane to State Route 49 does not include stoplights or a stop sign on the highway. The addition of the residences south of the existing intersection would add to the level of traffic. In addition, none of this section of State Route 49 has standard sidewalks, curbs, or gutters. This combination of conditions would likely worsen the area's Level of Service (LOS) for traffic operations. Implementation of the project would improve the LOS, as well as improve the drainage.

SECTION 4.0
Records Review

The purpose of the records review is to obtain and examine records that could help to evaluate potential RECs, HRECs, and CRECs in connection with the proposed project. This section documents the database records search and evaluation of other records that were conducted, and describes the physical setting of the project area.

4.1 Results of Database Search

Federal, state, and local regulatory agencies publish databases of businesses and properties that handle hazardous materials or hazardous waste, including those properties with a known release of hazardous substances to soil and/or groundwater. These databases are available for review and/or purchase at the regulatory agencies, or the information may be obtained through a commercial database service. ESA contracted with a commercial database service to perform the regulatory agency database search for listings within the appropriate ASTM Standard minimum search distance (GeoSearch, 2018). A detailed description of the types of information contained in each of the databases reviewed and the agency responsible for compiling the data is included in the Radius Report provided as **Appendix A**, which includes a list of acronyms for the individual searched databases.

ESA evaluated the listings with regard to the nature of potential chemicals of concern, the extent of known releases, and the physical setting of the parcels (e.g., soil properties, geology, and seismicity). In general, reported or potential releases likely to affect a property would include those located on or within 1/8-mile radius of the parcels. Sites that are reported to use or have used hazardous materials but do not have any records of leaks, spills, or releases are not considered further since such sites would not have affected the project site. ESA also considered additional factors such as chemical properties, regional knowledge of the site vicinity, groundwater flow direction, and available past regulatory documentation as part of the REC evaluation.

All information on hazardous materials sites is from the regulatory database search (GeoSearch, 2018) unless otherwise indicated. Updates to the regulatory agency database records search were acquired by checking the State Water Resources Control Board (SWRCB) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor websites to search for other possible site listings and updated information to the database search, and to identify sites that have been recently cleanup and closed after the database search was conducted.

Subject Site Listings

The following one listing is located within the project site as shown on Figure 2. The site numbers keyed to the listings and maps in the regulatory database report in Appendix A.

8 – Former service station – One former service station was previously located at 493 Main Street (now Pleasant Valley Road and State Route 49; see Figure 2), about 250 feet northeast of the northernmost part of the project site (GeoSearch, 2018; RWQCB, 1996). Two 500-gallon gasoline USTs were removed in 1992. The USTs had numerous holes and the surrounding soil was contaminated. Although the RWQCB issued a No Further Action (NFA) letter in 1996, the NFA letter states that contaminated soil and groundwater are present along the south side of the former service station site extending to beneath State Route 49 and toward the project site. Soil samples from the south wall of the UST excavation facing State Route 49 had 540 milligrams per kilograms (mg/kg) of total petroleum hydrocarbons (TPH) as gasoline, 1.4 mg/kg of toluene, 2.2 mg/kg of ethylbenzene, and 11 mg/kg of xylenes. Soil samples collected further south and closer to State Route 49 had 260 to 1,400 mg/kg of TPH as gasoline, 0.49 to 3.8 mg/kg of toluene, non-detect to 16 mg/kg of ethylbenzene, and 3.0 to 86 mg/kg of xylenes. In addition, groundwater collected from the excavation pit had 40 micrograms per liter (ug/L) of TPH as gasoline, 500 ug/L of benzene, 1,200 ug/L of toluene, 410 ug/L of ethylbenzene, and 3,000 ug/L of xylenes. The RWQCB concluded that contaminated soil and groundwater extends to an unknown distance beneath State Route 49. No maps of this site were provided. It is unknown whether the soil and groundwater contamination extends further to beneath the project site. Note that the available records did not include maps showing the location of the USTs or contamination. **This is considered an REC because excavation for the project within, adjacent, and possibly south of State Route 49 may encounter contaminated soil and groundwater.**

Offsite Listings

Twenty-two offsite locations were listed for hazardous materials use within the ASTM search distances. However, most of the offsite listings are listings for routine hazardous materials use or disposal but with no records of spills, leaks, or releases. Sites with no records of leaks, spills, or releases are not considered further.

The following 12 sites are located upgradient of or near to the project site and have records of spills, leaks, or releases. The site numbers are keyed to the listings and maps in the regulatory database report in Appendix A.

2 - Phillip N. Hufft mining claim – A claim for placer gold mining is listed under the name of Phillip N. Hufft and the majority of the project site shows extensive evidence of reworking for placer mining operations. No mining equipment or associated contamination was observed during the site reconnaissance. An internet check of the mining name claim identified a Phillip Newton Hufft that died in Placerville on February 7, 1878, suggesting that this is a gold rush-era claim that is still listed but hasn't been active since then. The mining operations appear to have used placer mining techniques where gold was separated using water and gravity. This technique would not have used chemicals, such as mercury. Therefore, this placer mining operation is not anticipated to have resulted in residual environmental issues and is not considered a REC.

4 – Potable water leak – About 1,000 gallons of potable water was released from a pipe break in 2004. However, given that the released material was water treated to drinking water standards, this would not be a hazardous material and would not have adversely affected the project site.

6 – Waste water spill – About 300 gallons of waste water was spilled into a drainage ditch in 2008. No information was listed regarding the nature of the waste water, the extent of the spill, or the cleanup activities. Given the date of the spill, this spill is considered unlikely to be a continuing environmental concern. This site is considered to be an HREC but not a current REC.

11 – El Dorado Union High School – This school site has six active USTs: two 12,000-gallon diesel USTs, two 8,000-gallon gasoline USTs, and two 1,000-gallon gasoline USTs. This site has no records of violations, spills, leaks, or releases. Therefore, this site would not have affected the project site.

12 – Waste connections – This site is a waste recycling and disposal center located at 4100 Throwita Way that was constructed on a former lime processing facility. The environmental concern is that lime has an elevated pH that could threaten groundwater quality. However, the direction of groundwater flow is to the northwest away from the project site (Youngdahl, 2018). Therefore, any contamination issues with the former lime processing center would be unable to affect the project site.

14 – Foothill Auto Repair – The site is listed for poor housekeeping that allowed solvents, antifreeze, and waste oil to be spilled on the ground (GeoSearch, 2019). However, a nearby well was sampled and the testing results indicated that the spills had not migrated to groundwater. Therefore, any contamination issues with the auto repair facility were limited to the repair facility and would be unable to affect the project site.

18 and 21 – Celebrity Plating – This site is a plating shop cited for poor housekeeping with cyanide, chromium, nickel and other metals detected in soil from spills. However, this site is located about ½-mile north of the project site. Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). In addition, the DTSC determined that this site does not pose a threat to other properties. Therefore, any contamination issues with this site would be unable to affect the project site.

20 – Teters Auto Wrecking – This site, located about ½-mile north of the project site, is listed as a one-acre auto wrecking yard in 1987 based on the nature of the site activities. No further investigation is documented, no records of spills, leaks, or releases are recorded, and the site is listed as a low priority. Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). Therefore, any contamination issues with this site would be unable to affect the project site.

22 – Oxygen Service and Supply Company – This site, located about ½-mile north of the project site, is an oxygen service and supply facility listed due to the nature of the facility. No further investigation is documented, and no records of spills, leaks, or releases are recorded.

Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). Therefore, any contamination issues with this site would be unable to affect the project site.

23 – Old Caldor Lumber Company – This site, located about 3/4-mile north of the project site, is a former lumber yard, listed due to the nature of the previous activities. The DTSC completed a Preliminary Endangerment Assessment in 1989 and concluded that this site does not pose a threat to public health or the environment (GeoSearch, 2018).

Sites with Poor or Inadequate Addresses

Sites not plotted due to poor or inadequate address information are referred to as orphan sites. Three orphan sites were listed. The Union Mine address is about 1-1/2 mile to the southwest and cross- to downgradient of the project site. The two Bright Court addresses are located about one mile west of the project site and cross gradient of the project site. These three orphan site listings are not upgradient of the project site and would not be able to affect the project site.

4.2 Other Records Reviewed

ESA accessed websites for the State Water Resources Control Board and Department of Toxic Substance Control that track hazardous materials sites. In addition, the regulatory agency records search provides historical aerial photographs, historical topographic maps, and a search of Sanborn insurance maps and city directories for review. The results of the review of these records are discussed below.

Hazardous Materials Websites

ESA accessed the SWRCB and DTSC combined online GeoTracker database at http://geotracker.waterboards.ca.gov/ and EnviroStor database at http://www.envirostor.dtsc.ca.gov/public for cleanup sites located on or near the subject property under SWRCB jurisdiction. The former service station previously located at 493 Main Street is discussed above as Site 2 was listed and the available information incorporated above. The Youngdahl, 2018, report was acquired from the GeoTracker website and used to augment the discussions above for Sites 12, 18, 20, 21, and 22. No other active sites were listed upslope (upgradient) of the proposed project.

Historical Aerial Photographs

Historical aerial photographs are available for the years 1946, 1952, 1964, 1975, 1980, 1984, 1993, 2004, 2005, 2006, 2009, 2010, 2012, 2014, and 2016, included in **Appendix B** (GeoSearch, 2018). The 2018 aerial photograph is used as the base for Figure 2.

1946

The 1946 aerial photograph shows State Route 49 and China Garden Road in their current alignment. Faith Lane and Silver Drive are not yet present. Evidence of the placer mining activities south of State

Route 49 of the late 1800's has been muted by time, consisting of various unpaved roads, paths, and other ground surface works. No mining equipment is visible in the photograph, assuming any had been used for placer mining; placer mining generally uses only water and gravity to separate the gold from soil. The area next to and south of State Route 49 have what appears to be an orchard with two structures likely to be a residence and agricultural support structure. As discussed above in the regulatory records search, a service station with USTs removed in 1992 was reportedly present at the location in the blue oval. A building is present within the blue oval and does not appear to be different from the present building occupying this location. The site reconnaissance observed the building is identified as the Gust Brothers Building constructed in 1930. No obvious fuel islands are visible although the 1946 station configuration may have been different from modern fuel island configurations. Given the documentation of a fuel leak next to and underneath State Route 49, the USTs and fuel dispensers are assumed to have been located between the building and the highway or perhaps along the side of the building near the highway. The surrounding area is a mix of rural use with some development. The cemetery, Carpenter house, and Morrill building identified on Figure 2 are present.

1952

In the 1952 aerial photograph, almost all of the orchard and building closest to State Route 49 are gone; the assumed agricultural structure set further back from the highway is still present.

1964

The 1964 aerial photograph shows increased development in the area. Silver Road is present.

1975

The 1975 aerial photograph shows Faith Lane in its current alignment. The Diamond Springs shopping center is also present at the southeast corner of State Route 49 and Faith Lane.

1980

The 1980 aerial photograph is of poor quality and does not appear to show any changes.

1984

The 1984 aerial photograph is of poor quality but shows extensive grading associated with a previous development south of State Route 49 that did not proceed beyond initial grading.

1993

The 1993 aerial photograph is of good quality and shows increased development in the area.

2004 through 2016

The 2004 through 2016 aerial photographs show no substantive changes.

Historical Topographic Maps

Historical topographic maps are availbale for the years 1891, 1892, 1893, 1949, 1950, 1973, and 2012, and are included in **Appendix B** (GeoSearch, 2018).

The 1891, 1892, 1893 are all small scale topographic maps (1:125,000-scale) that provide limited detail, but each show the project site with no development and State Route 49 in its current alignment. One unimproved road is shown along the western side of the project site. The 1949 topographic map is a larger scale map (1:24,000-scale) and shows China Garden Road and other nearby roadways. Diamond Springs is shown largely as currently developed. The 1950, 1973, and 2012 topographic maps show no substantive changes, though Faith Lane and Silver Road appear on the 1975 and later maps.

Fire Insurance Maps

Fire insurance maps did not cover the area of the project site, as documented in Appendix B (GeoSearch, 2018).

City Directory

A city directory search was conducted for the project site and nearby parcels (GeoSearch, 2018). The listings for section of Pleasant Valley Road within the proposed project are for residential or commercial properties not anticipated to handle significant quantities of hazardous materials. The search report is in Appendix B.

Permit History

Previous residential development efforts referred to as the Missouri Flat-Diamond Springs Redevelopment Project in the early 1980s proceeded as far as some limited initial grading visible beginning with the 1984 aerial photograph, discussed above (Snoke, 1984). The project did not proceed further. The Eldorado County online permit website was checked for violations; no violations were recorded (El Dorado County, 2019).

County Assessor Records

The El Dorado County Recorders records were checked for environmental liens on APN 329-301-20-100, the parcel adjacent to State Route 49 (GeoSearch, 2018). No liens were recorded.

4.3 Physical Setting

The following sections provide information about the physical setting of the parcels obtained the regulatory agency records search in Appendix B. Although geotechnical information is not a required element of ASTM E1527-13 Phase I assessments, the regulatory records search includes some geotechnical information, as provided below.

Topography

The U.S. Geological Survey (USGS), 7.5 minute Placerville, California, topographic quadrangle map, 1973, depicts the subject property at an elevation ranging from about 1,819 feet above sea level at the northern end of the project site on China Garden Road to about 1,794 feet above sea at the southern end of the project site on Faith Lane. Most of the project site is hilly and sloping to the west or south.

Geology and Hydrology

Surface soil types consist of very fine sandy loam to very rocky sandy loam, with placer diggings throughout the area (GeoSearch, 2018). The entire project site is underlain Mesozoic granitic rocks with rock exposures in various locations. No wells are located on the project site. The flow direction of groundwater likely mimics the ground surface flowing to the northeast.

Oil and Gas Fields

There are no recorded oil or natural gas wells located on or within ½ mile of the parcel (GeoSearch, 2018).

Flood Zone Designation

The parcel is not located within the 100-year flood zone (GeoSearch, 2018).

SECTION 5.0
Site Reconnaissance

5.1 Methodology and Limiting Conditions

The purpose of the site reconnaissance was to identify visible hazardous materials on the project site. Michael Burns of ESA conducted the site reconnaissance on January 10, 2019, to assess present conditions. Weather at the time of the site visit was clear. The site conditions discussed below are limited to readily apparent environmental conditions observed. ESA archaeologists Heidi Koenig and Robin Hoffman accompanied Mr. Burns on the site reconnaissance. Local resident Mike Roberts and Native American representatives Ramona Tripp-Verbeck, Joseph Valdez, and John McGregor also accompanied the group for some of the reconnaissance.

5.2 Site Observations

The project site consists of State Route 49 and adjacent areas. Access is from State Route 49 (also referred to as Main Street or Pleasant Valley Road) and sections of Faith Lane, China Garden Road, and/or Silver Road, as needed. Drainage generally flows south. The project site consists paved roads, paved parking areas, and unimproved drainages and areas along the sides of the roads and parking areas. No standard sidewalks, curbs, and gutters are present anywhere in the project area; drainage flows to unlined ditches or across roadways. Several structures are present along the sides of the roads and within one or more of the potential road realignment option areas. Notable features and site conditions are identified on Figure 2 and discussed in the text below, along with photographs of features of interest. The reconnaissance is organized by subareas divided by the roads.

North of State Route 49 and East of China Garden Road

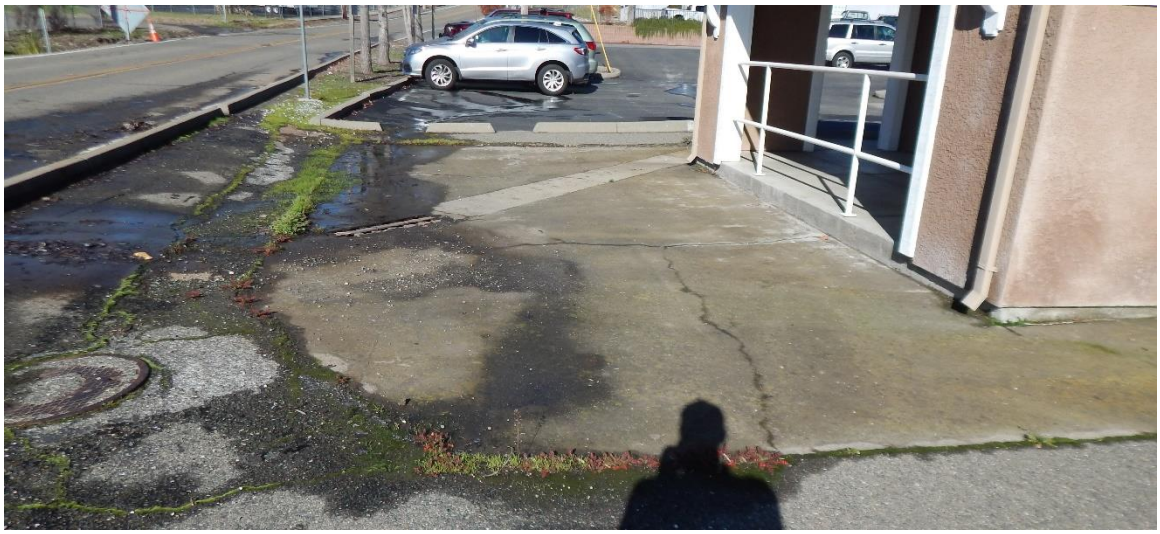
The Gust Brothers Building, located at 493 Main Street (State Route 49) and identified on Figure 2, was constructed in 1930. The building is currently occupied by a café, hair salon, and a dentist, as shown in the photographs below. A fire station is located next door. No USTs or above ground storage tanks (ASTs) are present. No hazardous materials, stained soil or pavement, or stressed vegetation were observed.

The photographs below show the existing Gust Brothers Building, which does not have the appearance of a former service station. As previously discussed above in the records review, this site was previously a service station with two 500-gallon gasoline USTs that were removed in 1992. The 1996 No Further Action letter issued by the RWQCB stated that contaminated soil and groundwater extended south to an unknown distance beneath State Route 49 and was left in place (RWQCB, 1996). Given the documentation that contamination extended to beneath the highway, it is assumed that the USTs must have been located in between the building and the highway or possibly to one side of the building but near the highway. Visual inspection did not indicate an obvious concrete or asphalt patch suggesting a filled-in excavation, as shown in the photographs

below. **Therefore, it is uncertain where the documented contamination was located or how far it extended beneath the highway; this uncertain condition is considered a REC**.







North of State Route 49 and West of China Garden Road

The El Dorado County Ambulance JPA building and parking lot is at 480 Locust Road and the northwest corner of State Route 49 and China Garden Road, and covers most of parcel. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed.



←Ambulance Building

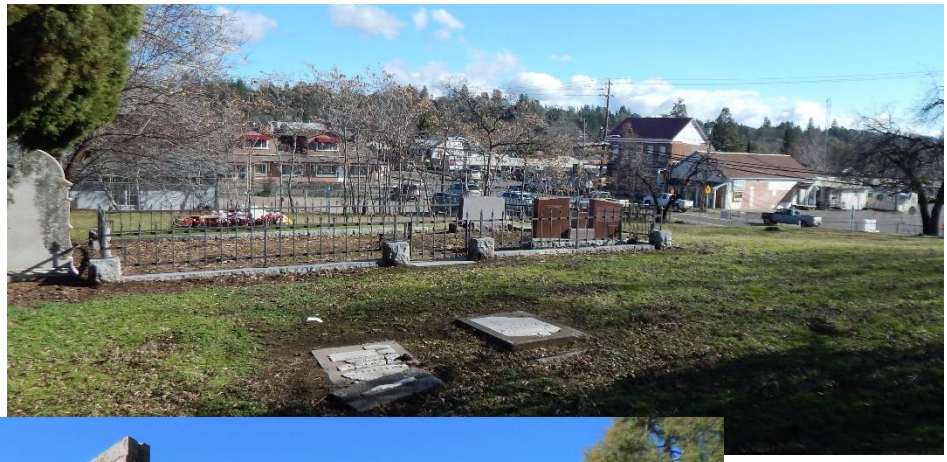
Drainage ditch between ambulance building and China Garden Road →



Ambulance building parking lot
↓



A cemetery that dates to the 1800s is adjacent and west of the ambulance building. Further west are several residences, undeveloped land, and the vacant, dilapidated, and historic stone Morrill Building built in 1857 at 425 Pleasant Valley Road. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed. The photographs below show the cemetery and the Morrill Building, whose locations are identified on Figure 2.







South of State Route 49 and West of Faith Lane

Deb's Frosty is a restaurant located at 460 Pleasant Valley Road (State Route 49), the southwest corner of State Route 49 and Faith Lane, as identified on Figure 2. The area behind Deb's Frosty has one propane tank, two dumpsters, one refrigeration unit, and one 55-gallon drum that was empty, as shown in the bottom photograph below. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed.



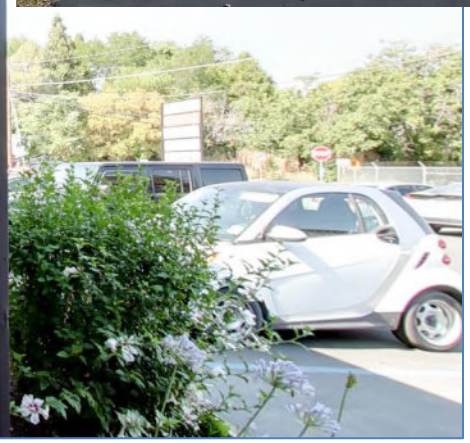


The Diamond Springs Plaza Shopping Center at 444 Pleasant Valley Road is located adjacent and west of Deb's Frosty. The center is occupied by a small strip mall occupied by small commercial retail outlets, including a hair salon, a massage parlor, a printer, and an internet carrier office. The retail outlets are anticipated to use small quantities of cleaning solutions, solvents, and other small quantities of chemicals specific to each business. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed.



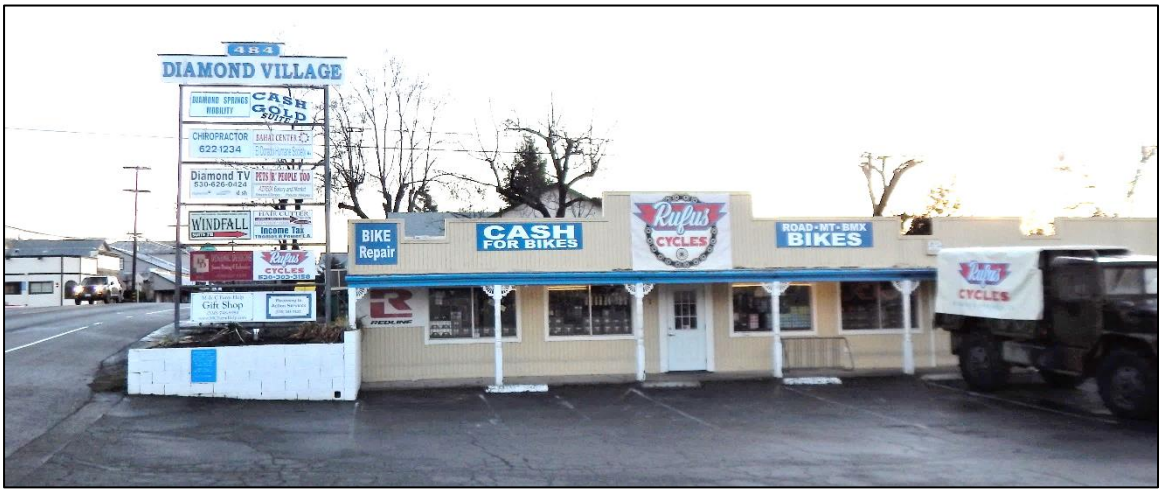






South of State Route 49 and East of Faith Lane

The area south of State Route 49 and east of Faith Lane is occupied by the Diamond Village Shopping Center at 484 and 478 Pleasant Valley Road. The center consists of several strip mall buildings occupied by small commercial retail outlets, including a chiropractor, cash for gold service, a Humane Society office (no outdoor animals or animal pens were observed), a television and computer repair shop, a bakery/market, barber shop, an income tax preparer, a printer/ embroiderer, a bicycle sales and repair shop, a gift shop, a medical equipment and supply outlet (e.g., wheelchairs and walkers), and several other spaces of uncertain use. The various outlets are anticipated to use small quantities of cleaning solutions, solvents, and other small quantities of chemicals specific to each business. No hazardous materials, ASTs, USTs, soil or pavement staining, or stressed vegetation were observed.







The historic brick Carpenter Building at 478 Pleasant Valley Road is also located in this shopping center at the location identified on Figure 2. This brick structure was constructed in 1877 by C. G. Carpenter, an early pioneer of Diamond Springs. The brick building and attached more recent structures are shown in the photographs below. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed. Given the age of the structure, ACM and/or LBP may be present. These are common building materials with existing regulations for proper handling and disposal.



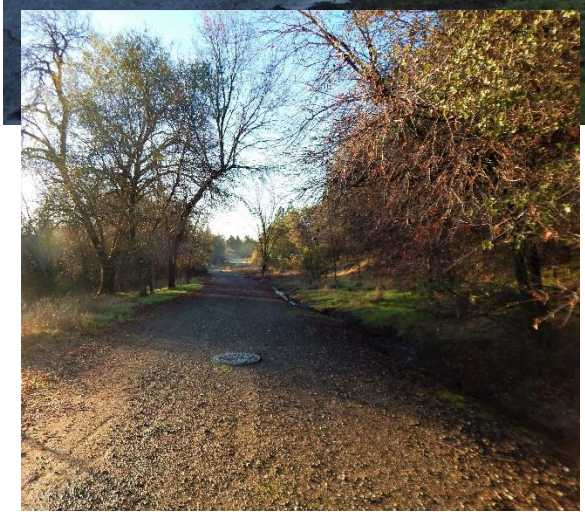


Faith Lane

Faith Lane is a paved road section that extends south from State Route 49/Pleasant Valley Road. The road extends south to a locked gate and an unpaved road section further south, as shown in the photographs below. A buried sewer line is located under the length of Faith Lane. Drainage ditches are on both sides of the road and drain to the south. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed.









The area west of Faith Lane is a fenced unpaved area with one closed storage trailer, whose contents are unknown. The rest of the area was empty. The area east of Faith Lane is empty and undeveloped but shows a hummocky topographic surface indicating historical placer mining activities. No USTs, ASTs, hazardous materials, stained soil or pavement, or stressed vegetation were observed.







5.3 Results of Site Reconnaissance

No evidence of discolored or stained pavement, soil, or water; stressed vegetation; ASTs; USTs; pits; or lagoons were observed at the project site. Trash and debris were observed in scattered locations, particularly inside the Morrill Building. However, the trash and debris are considered a *de minimus* condition because the materials can readily be recycled or disposed of at any municipal (Class III non-hazardous waste) landfill. The Carpenter Building may have ACM and/or LBP; these are common building materials with existing regulations for proper handling and disposal.

The release of gasoline to soil and groundwater from two USTs removed from the Gust Brothers Building site is considered a REC because the regulatory agency stated that contamination extended to some unknown distance beneath State Route 49. Depending on the extent of contamination and the footprint of the selected roadway and intersection alignment, the project may encounter soil and groundwater contaminated with fuel.

SECTION 6.0
Findings and Opinions

6.1 Findings and Opinions

Relevant federal, state, and local regulatory agency lists for sites at or near the project site were reviewed. A former service station at the corner of State Route 49 and China Garden Road was identified as the location of contaminated soil and groundwater that extend to an unknown distance beneath the highway. **This is considered a REC since excavation for the project may encounter contaminated soil and groundwater**. No other hazardous materials sites at or near the project were indicated in the database search results or by the regulatory agencies as being able to affect the project site. Various other sites have records of past minor releases that have been cleaned up and the cases closed by regulatory agencies. Various businesses that use small quantities of hazardous materials consisting of cleaning solutions and are located along the segments but none are listed on regulatory records as having violations or hazardous materials releases. In addition, all of the listed facilities are set back from the road segments. Given the setback distances, it is unlikely that any of the listed sites would be able to affect soil conditions in the road segments.

The site reconnaissance did not observe any RECs and verified that previous sites with cleanup actions are set back from the road. Some of the road segments have dirt shoulders or ditches without sidewalks or gutters. Some trash was observed in the ditches and shoulder areas; however, no containers, staining indicative of chemical releases, or stressed vegetation was observed. The trash and debris are considered a *de minimus* condition because the materials can be recycled or disposed of at any Class III (non-hazardous materials) landfill.

Although not an ASTM 1527 Phase I assessment consideration, it should be noted that structures that predate the 1970s USEPA ban on ACM and LBP may have these materials. Hazardous building materials would be required to be disposed of as licensed facilities permitted to accept the waste.

Various underground utilities were noted within and along the sides of most road segments. Construction activities would need to account for these utilities.

In addition, soil along the sides of the subject roadways may have concentrations of lead above action levels. Caltrans and the DTSC have developed guidance for evaluating and addressing aerially deposited lead at http://www.dot.ca.gov/env/hazwaste/adl.html. The investigation for aerially deposited lead would be included in the Preliminary Site Assessment (PSI) conducted for this project.

6.2 Data Gaps

ESA attempted to obtain reasonably ascertainable information regarding the bridge and the surrounding environs within the limited scope of work. There were no data gaps identified that could affect the identification of RECs, HRECs, or CRECs at the parcels.

SECTION 7.0
Report Authors and Qualifications

This section includes qualification statements of the environmental professionals responsible for conducting the Phase I assessment and preparing this report.

Mr. Michael Burns, PG, CEG, CHG, of ESA conducted the data review for the bridge, conducted the site reconnaissance, and prepared the Initial Site Assessment report. Mr. Burns has over 30 years of experience in environmental site investigations, characterizations, and assessments, including Initial Site Assessments.

The work conducted and the report written by Mr. Burns was reviewed by Mr. Luke Evans. Mr. Evans has 20 years of experience in environmental site investigations, characterizations, and assessments, including Initial Site Assessments.

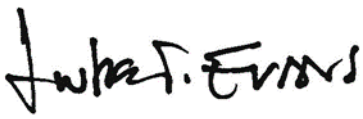
Mr. Burns declares that, to the best of his professional knowledge and belief, he meets the definition of Environmental Professional as defined in 40 CFR §312.10. Mr. Evans declares that, to the best of his professional knowledge and belief, he meets the definition of Environmental Professional as defined in 40 CFR §312.10.

Mr. Burns has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of this property. With the assistance of Mr. Evans, he has developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Principal Analyst/Reviewer: 

April 3, 2019

Michael G. Burns, PG #4532, CEG #1846, CHG #280

Senior Reviewer: 

April 3, 2019

Luke Evans, Program Manager

SECTION 8.0
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CTA Engineering and Surveying, 2018, *Tentative Map, Dorado Oaks*, September

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GeoSearch, 2018, *Radius Report, Target Property: Stonehenge Springs, Faith Lane, Diamond Springs, El Dorado County, California,* December 7

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US EPA, 1985, *Lead Poisoning: A Historical Perspective*, May

APPENDIX A

Regulatory Records Radius Report

GeoSearch
On time. On target. In touch.™

Radius Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269577
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Unlocatable Report . . . . . See Attachment

Zip Report . . . . . See Attachment

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR ï¿½312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR ï¿½312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)
1,761 feet above sea level

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCA	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR09	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR09	0	0	0.1250
FEMA OWNED STORAGE TANKS	FEMAUST	0	0	0.2500
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	1	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		1	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR09	0	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
FACILITY REGISTRY SYSTEM	FRSCA	3	0	TP/AP
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR09	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR09	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR09	0	0	TP/AP
SEMS LIEN ON PROPERTY	SEMSLIENS	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
INTEGRATED COMPLIANCE INFORMATION SYSTEM DRYCLEANERS	ICISCLEANERS	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	3	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		6	0	

Database Summary

STATE (CA) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
DTSC DEED RESTRICTIONS	DTSCDR	0	0	TP/AP
ABOVE GROUND STORAGE TANKS	ABST	0	0	0.2500
ABOVEGROUND STORAGE TANKS PRIOR TO JANUARY 2008	AST2007	0	0	0.2500
HISTORICAL UNDERGROUND STORAGE TANKS	HISTUST	1	1	0.2500
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	1	1	0.2500
UNDERGROUND STORAGE TANKS	USTCUPA	1	0	0.2500
BROWNFIELD SITES	BF	0	0	0.5000
CALSITES DATABASE	CALSITES	2	0	0.5000
GEOTRACKER CLEANUP SITES	CLEANUPSITES	4	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS	LUST	2	0	0.5000
SOLID WASTE INFORMATION SYSTEM SITES	SWIS	3	0	0.5000
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.5000
ENVIROSTOR CLEANUP SITES	ENVIROSTOR	7	0	1.0000
ENVIROSTOR PERMITTED AND CORRECTIVE ACTION SITES	ENVIROSTORPCA	0	0	1.0000

SUB-TOTAL		21	2	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	3	0	TP/AP
CLANDESTINE DRUG LABS	CDL	1	0	TP/AP
EMISSIONS INVENTORY DATA	EMI	0	0	TP/AP
HAZARDOUS WASTE TANNER SUMMARY	HWTS	2	0	TP/AP
LAND DISPOSAL SITES	LDS	0	0	TP/AP
MILITARY CLEANUP SITES	MCS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FACILITIES	NPDES	0	0	TP/AP
RECORDED ENVIRONMENTAL CLEANUP LIENS	LIENS	0	0	TP/AP
CALIFORNIA MEDICAL WASTE MANAGEMENT PROGRAM FACILITY LIST	MWMP	0	0	0.2500
DTSC REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.2500
DRY CLEANER FACILITIES	CLEANER	0	0	0.2500
MINES LISTING	MINES	0	0	0.2500

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.2500
CORTESE LIST	CORTESE	0	0	0.5000
EXPEDITED REMOVAL ACTION PROGRAM SITES	ERAP	0	0	0.5000
HISTORICAL CORTESE LIST	HISTCORTESE	3	0	0.5000
LISTING OF CERTIFIED DROPOFF, COLLECTION, AND COMMUNITY SERVICE PROGRAMS	DROP	3	1	0.5000
LISTING OF CERTIFIED PROCESSORS	PROC	1	0	0.5000
NO FURTHER ACTION DETERMINATION	NFA	1	0	0.5000
RECYCLING CENTERS	SWRCY	10	0	0.5000
REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	1	0	0.5000
SITES NEEDING FURTHER EVALUATION	NFE	0	0	0.5000
WASTE MANAGEMENT UNIT DATABASE	WMUDS	0	0	0.5000
TOXIC PITS CLEANUP ACT SITES	TOXPITS	0	0	1.0000

SUB-TOTAL		25	1	

Database Summary

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR09	0	0	0.2500
ILLEGAL DUMP SITES ON THE TORRES MARTINEZ RESERVATION	TORRESDUMPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR09	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		53	3	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR09	0.0200	0	NS	NS	NS	NS	NS	0
ERNSCA	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSCA	0.0200	3	NS	NS	NS	NS	NS	3
HMIRSR09	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR09	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR09	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SEMSLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
RCRANGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
FEMAUST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
HISTPST	0.2500	0	0	0	NS	NS	NS	0
ICISCLEANERS	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	1	2	0	NS	NS	NS	3
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**1**	**0**	**NS**	**NS**	**1**
SMCRA	0.5000	0	0	0	0	NS	NS	0
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		4	2	1	0	0	0	7

Database Radius Summary

STATE (CA) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.0200	1	NS	NS	NS	NS	NS	1
CHMIRS	0.0200	3	NS	NS	NS	NS	NS	3
DTSCDR	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
EMI	0.0200	0	NS	NS	NS	NS	NS	0
HWTS	0.0200	2	NS	NS	NS	NS	NS	2
LDS	0.0200	0	NS	NS	NS	NS	NS	0
LIENS	0.0200	0	NS	NS	NS	NS	NS	0
MCS	0.0200	0	NS	NS	NS	NS	NS	0
NPDES	0.0200	0	NS	NS	NS	NS	NS	0
ABST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
AST2007	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
CLEANER	0.2500	0	0	0	NS	NS	NS	0
DTSCHWT	0.2500	0	0	0	NS	NS	NS	0
HISTUST	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
MINES	0.2500	0	0	0	NS	NS	NS	0
MWMP	0.2500	0	0	0	NS	NS	NS	0
SLIC	0.2500	0	0	0	NS	NS	NS	0
SWEEPS	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
USTCUPA	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CALSITES	**0.5000**	**0**	**0**	**0**	**2**	**NS**	**NS**	**2**
CLEANUPSITES	**0.5000**	**0**	**1**	**0**	**3**	**NS**	**NS**	**4**
CORTESE	0.5000	0	0	0	0	NS	NS	0
DROP	0.5000	0	0	0	3	NS	NS	3
ERAP	0.5000	0	0	0	0	NS	NS	0
HISTCORTESE	0.5000	0	1	0	2	NS	NS	3
LUST	**0.5000**	**0**	**1**	**0**	**1**	**NS**	**NS**	**2**
NFA	0.5000	0	0	0	1	NS	NS	1
NFE	0.5000	0	0	0	0	NS	NS	0
PROC	0.5000	0	0	0	1	NS	NS	1
REF	0.5000	0	0	0	1	NS	NS	1
SWIS	**0.5000**	**0**	**0**	**0**	**3**	**NS**	**NS**	**3**
SWRCY	0.5000	0	0	0	10	NS	NS	10
VCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
WMUDS	0.5000	0	0	0	0	NS	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
ENVIROSTOR	**1.0000**	**0**	**0**	**0**	**3**	**4**	**NS**	**7**
ENVIROSTORPCA	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
TOXPITS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		6	3	3	30	4	0	46

Database Radius Summary

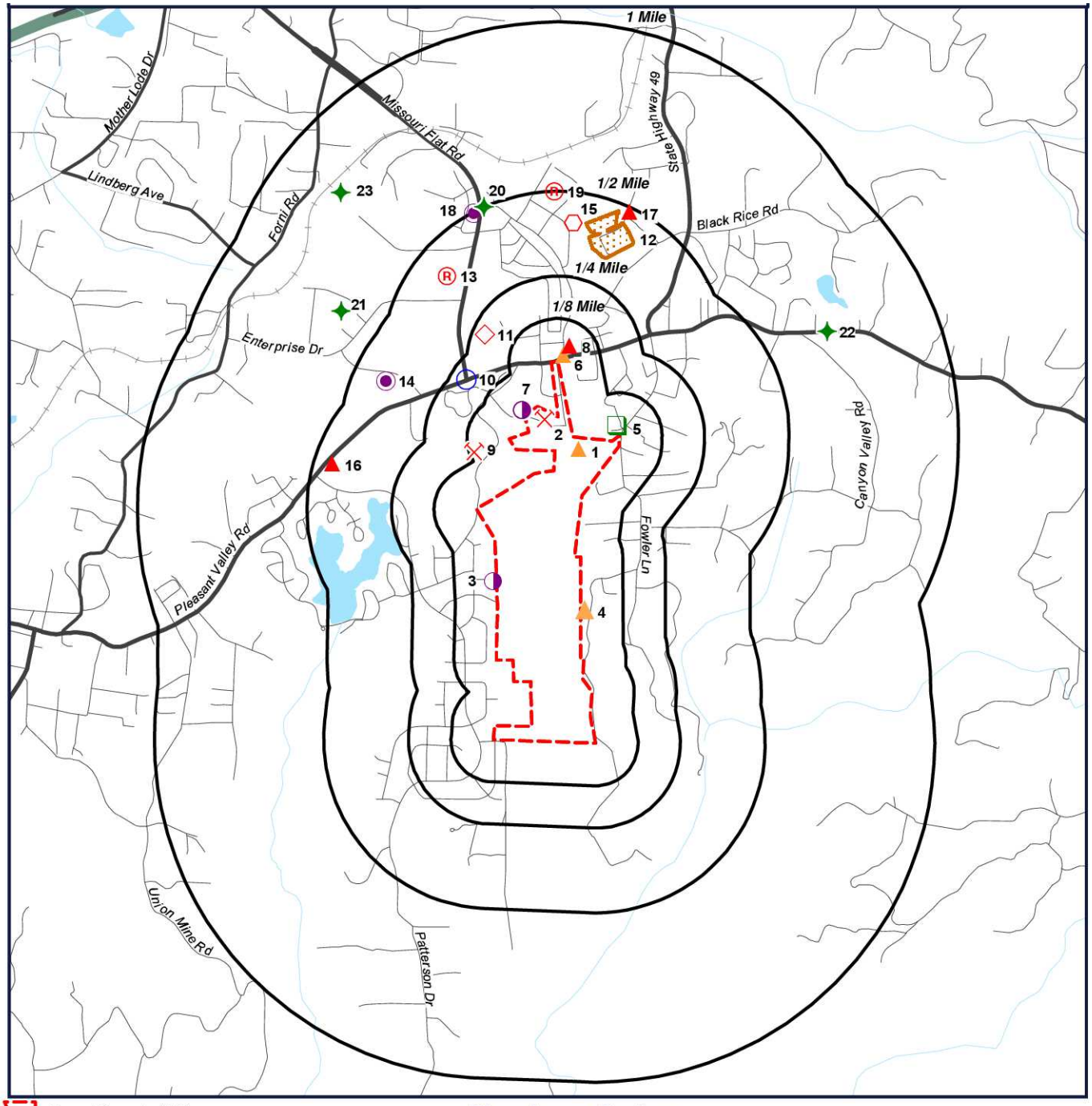
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR09	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR09	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
TORRESDUMPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		10	5	4	30	4	0	53

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

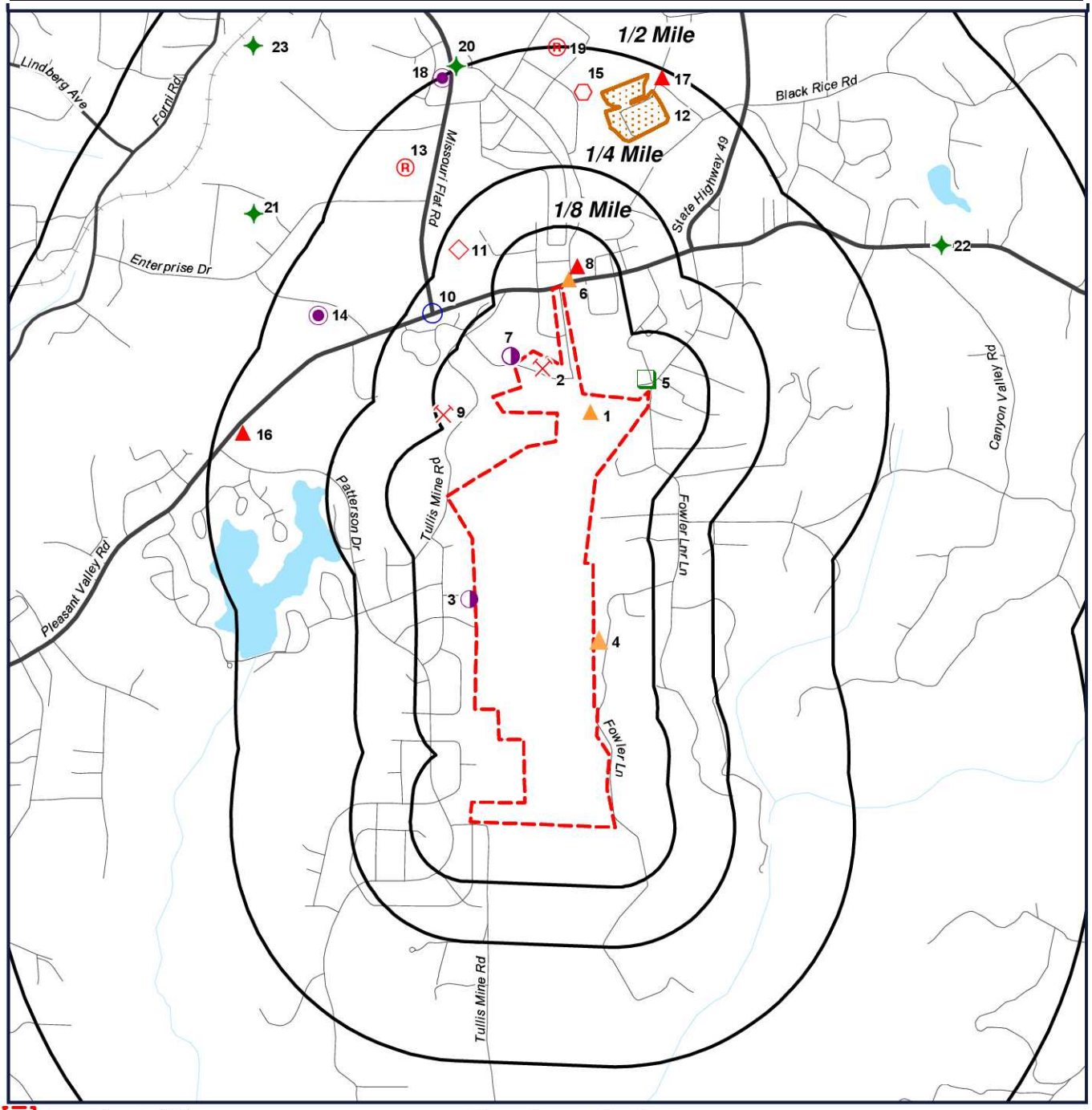
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W
E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

[Click here to access Satellite view]

Radius Map 2



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

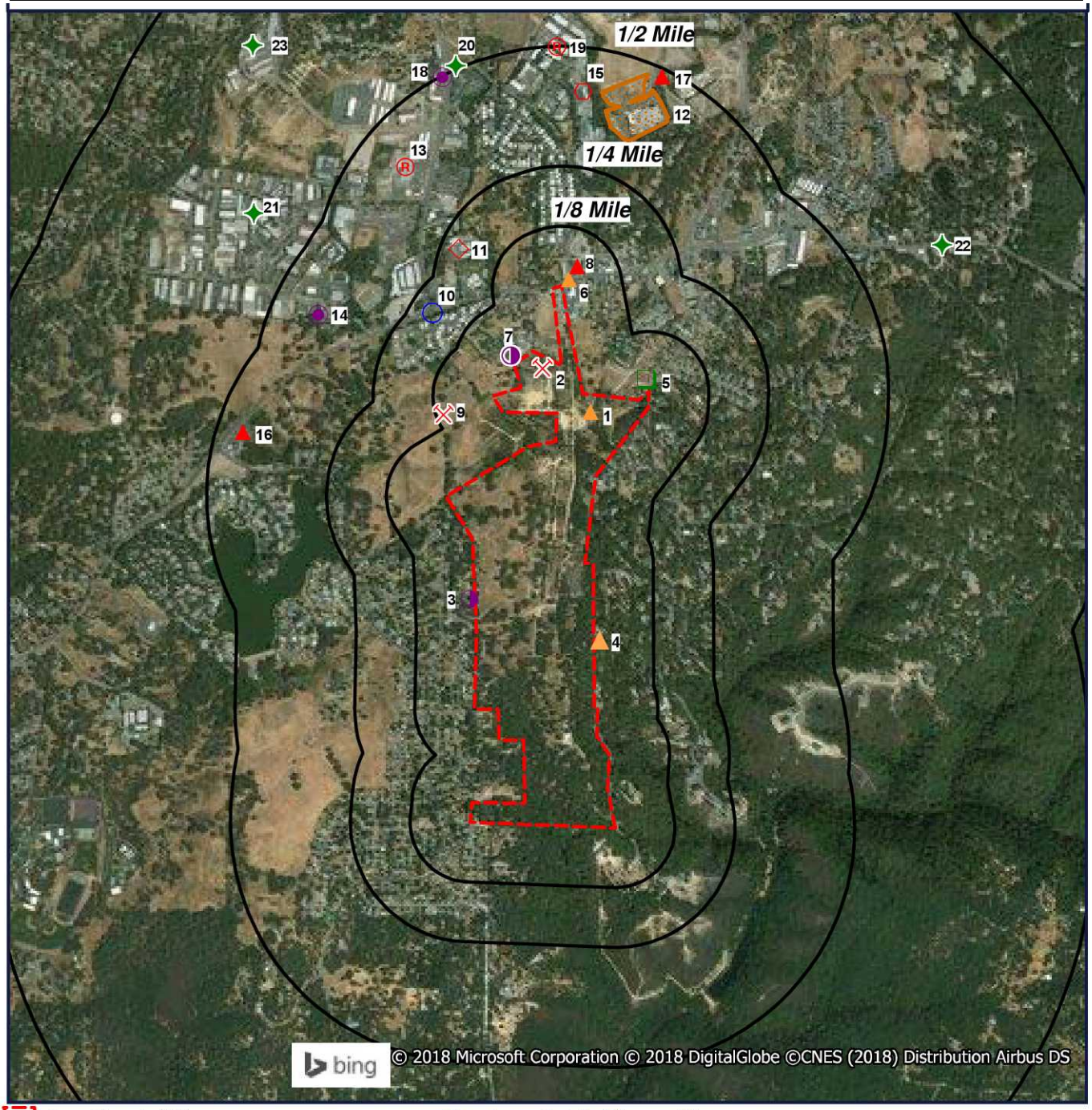
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 850' 1700' 2550'
SCALE: 1" = 1700'

[Click here to access Satellite view]

Ortho Map



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

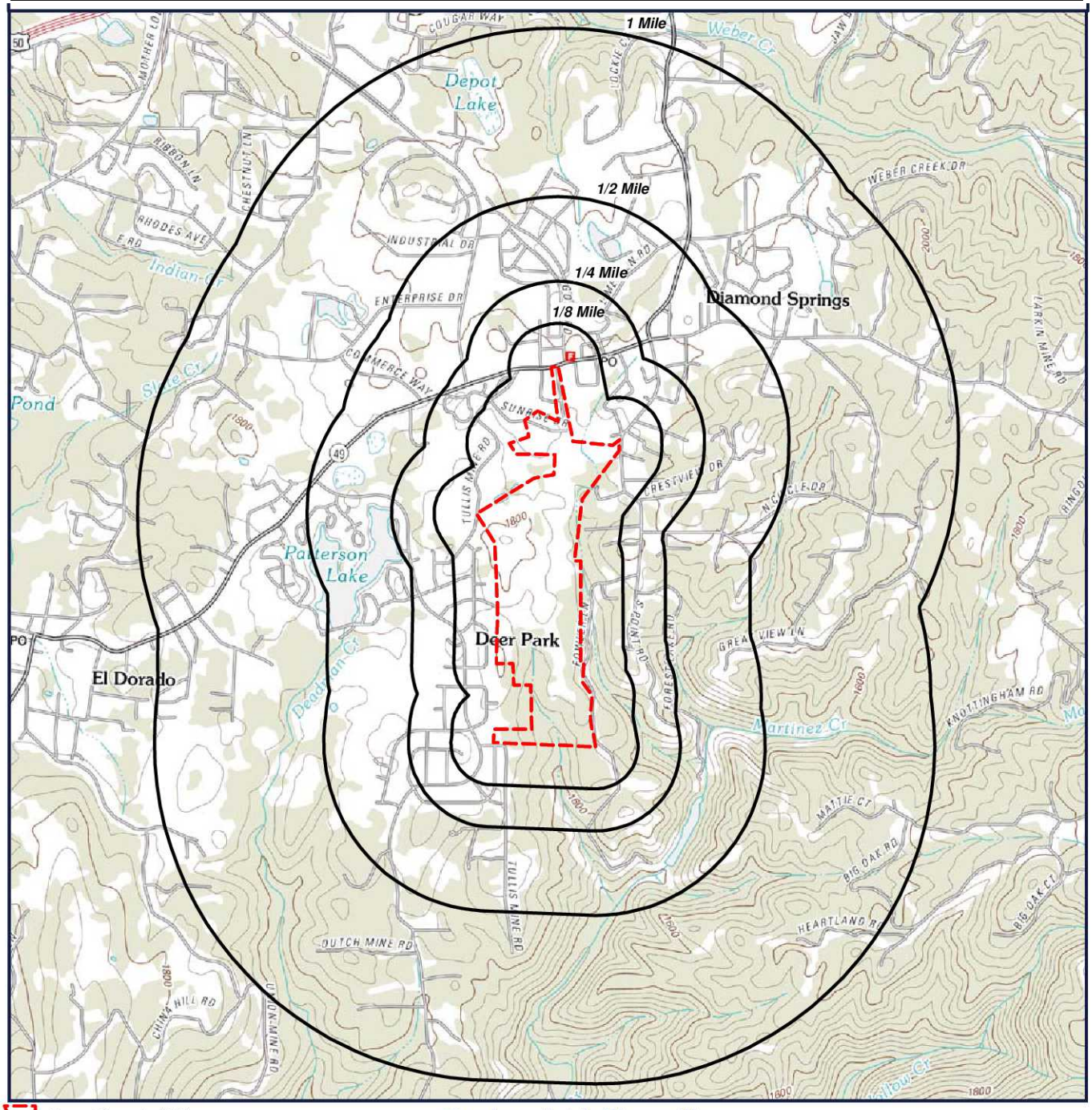
Quadrangle(s): Placerville
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 850' 1700' 2550'
SCALE: 1" = 1700'

Click here to access Satellite view

Topographic Map



Target Property (TP)

Quadrangle(s): Placerville
Source: USGS, 03/06/2012
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

[Click here to access Satellite view]

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	CHMIRS	005732	Lower (1,739 ft.)	TP		DEBS FROSTY LIFT STATION END OF FAITH LANE, DIAMOND SPRINGS, CA 95619	22
1	FRSCA	110065851242	Lower (1,739 ft.)	TP	DEB'S FROSTY LIFT STATION	FAITH LANE ESNA 0.25 MI. S/HWY 49, DIAMOND SPRINGS, CA 95619	23
2	MRDS	10139067	Higher (1,763 ft.)	TP	PHILLIP N. HUFFT CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	24
3	HWTS	CAC002801219	Higher (1,778 ft.)	0.012 mi. W (63 ft.)	MARK MORGAN	210 JUSTINE CT, DIAMOND SPRINGS, CA 95619	25
4	CDL	200202096	Lower (1,690 ft.)	0.012 mi. E (63 ft.)		473 FOWLER LANE, DIAMOND SPRINGS, CA 95619	26
4	CHMIRS	04-1482	Lower (1,690 ft.)	0.012 mi. E (63 ft.)		473 FOWLER LANE, DIAMOND SPRINGS, CA 95667	27
5	FRSCA	110064896171	Lower (1,753 ft.)	0.018 mi. N (95 ft.)	DIAMOND VILLAS SENIOR HOUSING	PANTHER LANE, DIAMOND SPRINGS, CA 95619	28
6	CHMIRS	08-5950	Higher (1,786 ft.)	0.019 mi. ENE (100 ft.)		CHINA GARDEN AT PLEASANT VALLEY RD., DIAMOND SPRINGS, CA	29
7	FRSCA	110066033820	Higher (1,767 ft.)	0.019 mi. NW (100 ft.)	WARD'S AUTOMOTIVE	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	30
7	HWTS	CAL000167531	Higher (1,767 ft.)	0.019 mi. NW (100 ft.)	WARDS AUTOMOTIVE INC	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	31
8	***CLEANUPSITES***	***T0601700047***	***Higher (1,786 ft.)***	***0.05 mi. NE (264 ft.)***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***32***
8	HISTCORTESE	090065COR	Higher (1,786 ft.)	0.05 mi. NE (264 ft.)	FORMER SS	493 MAIN, DIAMOND SPRINGS, CA 95619	33
8	***LUST***	***T0601700047***	***Higher (1,786 ft.)***	***0.05 mi. NE (264 ft.)***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***34***
9	MRDS	10029926	Lower (1,760 ft.)	0.107 mi. WSW (565 ft.)	ROBERT NELSON CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	35
9	MRDS	10029927	Lower (1,760 ft.)	0.107 mi. WSW (565 ft.)	WHEELOCK	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	36
10	***SEMSARCH***	***CAD980637417***	***Higher (1,762 ft.)***	***0.201 mi. WNW (1061 ft.)***	***OLD CALDOR LUMBER CO YD***	***HWY 49 & FLAT RD, DIAMOND SPRINGS, CA 95619***	***37***
11	***HISTUST***	***0002344F***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619***	***38***
11	***SWEEPS***	***A09-000-46253***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT RD, DIAMOND SPRINGS, CA 95619***	***42***
11	***USTCUPA***	***187573130***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EDUHSD TRANSPORTATION***	***4675 MISSOURI FLAT RD, PLACERVILLE, CA 95667***	***43***
12	***CLEANUPSITES***	***T10000009244***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WASTE CONNECTIONS***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***44***
12	DROP	CP0674	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	MATERIAL RECOVERY FACILITY	4100 THROWITA WAY, PLACERVILLE, CA 95667	46

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
12	DROP	CP0880	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	47
12	DROP	CP0961	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	SEI SOLID WASTE	4100 THROWITA WAY, PLACERVILLE, CA 95667	48
12	PROC	PR0439	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	49
12	***SWIS***	***09-AA-0004SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WESTERN EL DORADO RECOVERY SYSTEMS MRF***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***50***
12	***SWIS***	***09-AA-0006SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WEDRS-GREEN WASTE RECYCLING CENTER***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***51***
12	***SWIS***	***09-AA-0007SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WEDRS- CDI RECOVETY OPERATION (MVCDI)***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***52***
12	SWRCY	CP0880	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	53
12	SWRCY	CS1171	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	54
12	SWRCY	CS1234	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	55
12	SWRCY	CS1235	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	56
12	SWRCY	CS1236	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	57
12	SWRCY	CS19394.001	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	58
12	SWRCY	PR0439	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	59
12	SWRCY	RC10531	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WESTERN EL DORADO RECOVERY SYSTEMS	4100 THROWITA WY, PLACERVILLE, CA 95667	60
13	SWRCY	RC10654	Higher (1,816 ft.)	0.396 mi. WNW (2091 ft.)	MISSOURI FLAT RECYCLE CENTER	4600 MISSOURI FLAT RD, PLACERVILLE, CA 95667	61
14	***CALSITES***	***09750002***	***Higher (1,802 ft.)***	***0.401 mi. WNW (2117 ft.)***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***62***
14	***ENVIROSTOR***	***09750002***	***Higher (1,802 ft.)***	***0.401 mi. WNW (2117 ft.)***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***63***
14	REF	9750002	Higher (1,802 ft.)	0.401 mi. WNW (2117 ft.)	FOOTHILL AUTO REPAIR	6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619	64

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
15	HISTCORTESE	6A189101N25C OR	Higher (1,801 ft.)	0.403 mi. N (2128 ft.)	GUSTAFSON D M & PATRICI	3655 CHUCKWAGON, PLACERVILLE, CA 95667	65
16	***CLEANUPSITES***	***T0601700077***	***Lower (1,747 ft.)***	***0.443 mi. WNW (2339 ft.)***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***66***
16	HISTCORTESE	090096COR	Lower (1,747 ft.)	0.443 mi. WNW (2339 ft.)	STEVE'S CHEAPER	130 PLEASANT VALLEY, DIAMOND SPRINGS, CA 95619	69
16	***LUST***	***T0601700077***	***Lower (1,747 ft.)***	***0.443 mi. WNW (2339 ft.)***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***70***
17	***CLEANUPSITES***	***T10000010458***	***Higher (1,819 ft.)***	***0.481 mi. NNE (2540 ft.)***	***ABEL TRUST***	***4061 LIME PLANT ROAD, DIAMOND SPRINGS, CA 95667***	***71***
18	***CALSITES***	***09340001***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***73***
18	***ENVIROSTOR***	***09340001***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***74***
18	***ENVIROSTOR***	***71003046***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY, INC.***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***75***
18	NFA	71003046	Higher (1,817 ft.)	0.497 mi. NNW (2624 ft.)	CELEBRITY, INC.	4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667	76
19	SWRCY	RC4019	Higher (1,812 ft.)	0.498 mi. N (2629 ft.)	E M RECYCLING	4040 #A-2 STAGE CT, PLACERVILLE, CA 95667	77
20	***ENVIROSTOR***	***09500006***	***Higher (1,817 ft.)***	***0.522 mi. NNW (2756 ft.)***	***TETERS AUTO WRECKERS***	***4487 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***78***
21	***ENVIROSTOR***	***71003697***	***Lower (1,757 ft.)***	***0.641 mi. WNW (3384 ft.)***	***CELEBRITY, INC.***	***6650 MERCHANDISE WAY, DIAMOND SPRINGS, CA 95619***	***79***
22	***ENVIROSTOR***	***09280001***	***Higher (1,848 ft.)***	***0.683 mi. ENE (3606 ft.)***	***OXYGEN SERVICE AND SUPPLY COMPANY***	***13 CHINA GARDEN ROAD, DIAMOND SPRINGS, CA 95619***	***80***
23	***ENVIROSTOR***	***09730001***	***Higher (1,794 ft.)***	***0.818 mi. WNW (4319 ft.)***	***OLD CALDOR LUMBER COMPANY YARD***	***180 INDUSTRIAL DRIVE, DIAMOND SPRINGS, CA 95619***	***81***

Elevation Summary

Elevations are collected from the USGS 3D Elevation Program 1/3 arc-second (approximately 10 meters) layer hosted at the NGTOC. .

Target Property Elevation: 1761 ft.

*NOTE: Standard environmental records are displayed in **bold**.*

EQUAL/HIGHER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
2	MRDS	1,763 ft.	PHILLIP N. HUFFT CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	24
3	HWTS	1,778 ft.	MARK MORGAN	210 JUSTINE CT, DIAMOND SPRINGS, CA 95619	25
6	CHMIRS	1,786 ft.		CHINA GARDEN AT PLEASANT VALLEY RD., DIAMOND SPRINGS, CA	29
7	FRSCA	1,767 ft.	WARD'S AUTOMOTIVE	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	30
7	HWTS	1,767 ft.	WARDS AUTOMOTIVE INC	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	31
8	***CLEANUPSITES***	***1,786 ft.***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***32***
8	HISTCORTESE	1,786 ft.	FORMER SS	493 MAIN, DIAMOND SPRINGS, CA 95619	33
8	***LUST***	***1,786 ft.***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***34***
10	***SEMSARCH***	***1,762 ft.***	***OLD CALDOR LUMBER CO YD***	***HWY 49 & FLAT RD, DIAMOND SPRINGS, CA 95619***	***37***
11	***HISTUST***	***1,799 ft.***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619***	***38***
11	***SWEEPS***	***1,799 ft.***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT RD, DIAMOND SPRINGS, CA 95619***	***42***
11	***USTCUPA***	***1,799 ft.***	***EDUHSD TRANSPORTATION***	***4675 MISSOURI FLAT RD, PLACERVILLE, CA 95667***	***43***
12	***CLEANUPSITES***	***1,812 ft.***	***WASTE CONNECTIONS***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***44***
12	DROP	1,812 ft.	MATERIAL RECOVERY FACILITY	4100 THROWITA WAY, PLACERVILLE, CA 95667	46
12	DROP	1,812 ft.	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	47
12	DROP	1,812 ft.	SEI SOLID WASTE	4100 THROWITA WAY, PLACERVILLE, CA 95667	48
12	PROC	1,812 ft.	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	49
12	***SWIS***	***1,812 ft.***	***WESTERN EL DORADO RECOVERY SYSTEMS MRF***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***50***
12	***SWIS***	***1,812 ft.***	***WEDRS-GREEN WASTE RECYCLING CENTER***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***51***
12	***SWIS***	***1,812 ft.***	***WEDRS- CDI RECOVETY OPERATION (MVCDI)***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***52***
12	SWRCY	1,812 ft.	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	53
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	54

Elevation Summary

Map ID#	Database Name	Elevation	Site Name	Address	Page #
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	55
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	56
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	57
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	58
12	SWRCY	1,812 ft.	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	59
12	SWRCY	1,812 ft.	WESTERN EL DORADO RECOVERY SYSTEMS	4100 THROWITA WY, PLACERVILLE, CA 95667	60
13	SWRCY	1,816 ft.	MISSOURI FLAT RECYCLE CENTER	4600 MISSOURI FLAT RD, PLACERVILLE, CA 95667	61
14	***CALSITES***	***1,802 ft.***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***62***
14	***ENVIROSTOR***	***1,802 ft.***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***63***
14	REF	1,802 ft.	FOOTHILL AUTO REPAIR	6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619	64
15	HISTCORTESE	1,801 ft.	GUSTAFSON D M & PATRICI	3655 CHUCKWAGON, PLACERVILLE, CA 95667	65
17	***CLEANUPSITES***	***1,819 ft.***	***ABEL TRUST***	***4061 LIME PLANT ROAD, DIAMOND SPRINGS, CA 95667***	***71***
18	***CALSITES***	***1,817 ft.***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***73***
18	***ENVIROSTOR***	***1,817 ft.***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***74***
18	***ENVIROSTOR***	***1,817 ft.***	***CELEBRITY, INC.***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***75***
18	NFA	1,817 ft.	CELEBRITY, INC.	4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667	76
19	SWRCY	1,812 ft.	E M RECYCLING	4040 #A-2 STAGE CT, PLACERVILLE, CA 95667	77
20	***ENVIROSTOR***	***1,817 ft.***	***TETERS AUTO WRECKERS***	***4487 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***78***
22	***ENVIROSTOR***	***1,848 ft.***	***OXYGEN SERVICE AND SUPPLY COMPANY***	***13 CHINA GARDEN ROAD, DIAMOND SPRINGS, CA 95619***	***80***
23	***ENVIROSTOR***	***1,794 ft.***	***OLD CALDOR LUMBER COMPANY YARD***	***180 INDUSTRIAL DRIVE, DIAMOND SPRINGS, CA 95619***	***81***

LOWER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
1	CHMIRS	1,739 ft.		DEBS FROSTY LIFT STATION END OF FAITH LANE, DIAMOND SPRINGS, CA 95619	22
1	FRSCA	1,739 ft.	DEB'S FROSTY LIFT STATION	FAITH LANE ESNA 0.25 MI. S/HWY 49, DIAMOND SPRINGS, CA 95619	23
4	CDL	1,690 ft.		473 FOWLER LANE, DIAMOND SPRINGS, CA 95619	26

Elevation Summary

Map ID#	Database Name	Elevation	Site Name	Address	Page #
4	CHMIRS	1,690 ft.		473 FOWLER LANE, DIAMOND SPRINGS, CA 95667	27
5	FRSCA	1,753 ft.	DIAMOND VILLAS SENIOR HOUSING	PANTHER LANE, DIAMOND SPRINGS, CA 95619	28
9	MRDS	1,760 ft.	ROBERT NELSON CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	35
9	MRDS	1,760 ft.	WHEELOCK	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	36
16	***CLEANUPSITES***	***1,747 ft.***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***66***
16	HISTCORTESE	1,747 ft.	STEVE'S CHEAPER	130 PLEASANT VALLEY, DIAMOND SPRINGS, CA 95619	69
16	***LUST***	***1,747 ft.***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***70***
21	***ENVIROSTOR***	***1,757 ft.***	***CELEBRITY, INC.***	***6650 MERCHANDISE WAY, DIAMOND SPRINGS, CA 95619***	***79***

California Hazardous Material Incident Report System (CHMIRS)

MAP ID# 1

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,739 ft. (Lower than TP)

INCIDENT INFORMATION

CONTROL #: **005732**
NOTIFIED: **12/16/94**
AGENCY: **EL DORADO IRRIGATION DISTRICT**
ADMINISTRATION: **NOT REPORTED**
INCIDENT LOCATION: **DEBS FROSTY LIFT STATION END OF FAITH LANE**
DIAMOND SPRINGS, CA 95619
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **RAW SEWAGE**
QUANTITY: **NOT REPORTED**
TYPE: **ONS**

INCIDENT DESCRIPTION

FAILURE AT LIFT STATION - UNKNOWN CAUSE UNDER INVESTIGATION WATER INVOLVEMENT UNKNOWN AT THIS TIME SPILL WENT TO CULVERT

CONTAINED: **NOT REPORTED**
WATER INVOLVED / WATERWAY: **NO / NOT REPORTED**
DATE AND TIME: **1200/16DEC**
SITE: **NOT REPORTED**
INJURIES: **NO**
FATALITIES: **NO**
EVACUATIONS: **NO**
CLEANUP BY: **EID**

Back to Report Summary

Facility Registry System (FRSCA)

MAP ID# 1

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,739 ft. (Lower than TP)

FACILITY INFORMATION

REGISTRY ID: **110065851242**

NAME: **DEB'S FROSTY LIFT STATION**

LOCATION ADDRESS: **FAITH LANE ESNA 0.25 MI. S/HWY 49**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

DEB'S FROSTY LIFT STATION

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

4952 - SEWERAGE SYSTEMS

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

Back to Report Summary

Mineral Resource Data System (MRDS)

MAP ID# 2

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,763 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10139067**
DEP ID: **10139067**
MINE NAME: **PHILLIP N. HUFFT CLAIM**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **UNKNOWN**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **PHILLIP N. HUFFT CLAIM**
STATUS: **CURRENT**

Back to Report Summary

Hazardous Waste Tanner Summary (HWTS)

MAP ID# 3

Distance from Property: 0.012 mi. (63 ft.) W
Elevation: 1,778 ft. (Higher than TP)

SITE INFORMATION

EPA ID: **CAC002801219**
NAME: **MARK MORGAN**
COUNTY: **NOT REPORTED**
ADDRESS: **210 JUSTINE CT**
DIAMOND SPRINGS, CA 95619-9318
FACILITY LINK: *Department of Toxic Substances Control*

CONTACT INFORMATION

CONTACT: **MARK MORGAN**
PHONE: **530-306-2485**
ADDRESS: **3218 EASTVIEW DR**
SHINGLE SPRINGS CA 956827109

MANIFEST SUMMARY INFORMATION

YEAR: **2015**
TSD ID: **CAD982042475**
GENERATOR COUNTY: **NOT REPORTED**
DISPOSAL COUNTY: **SOLANO**
WASTE CATEGORY: **ASBESTOS CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.23**
DISPOSAL METHOD: **LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)**

Back to Report Summary

Clandestine Drug Labs (CDL)

MAP ID# 4

Distance from Property: 0.012 mi. (63 ft.) E
Elevation: 1,690 ft. (Lower than TP)

SITE INFORMATION

GEOSEARCH ID: **200202096**

ID#: **2002-02-096**

ADDRESS: **473 FOWLER LANE**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

LAB TYPE: **ILLEGAL DRUG LAB - LOCATION WHERE AND ILLEGAL DRUG LAB WAS OPERATED OR DRUG LAB EQUIPMENT AND/OR MATERIALS WERE STORED**

Back to Report Summary

California Hazardous Material Incident Report System (CHMIRS)

MAP ID# 4

Distance from Property: 0.012 mi. (63 ft.) E
Elevation: 1,690 ft. (Lower than TP)

INCIDENT INFORMATION

CONTROL #: **04-1482**
NOTIFIED: **03/17/04**
AGENCY: **EL DORADO IRRIGATION DISTRICT**
ADMINISTRATION: **EL DORADO COUNTY ENVIRONMENTAL MGMT.**
INCIDENT LOCATION: **473 FOWLER LANE**
DIAMOND SPRINGS, CA 95667
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **POTABLE WATER**
QUANTITY: **1000**
TYPE: **GALS**

INCIDENT DESCRIPTION

TWO INCH LINE BREAK CAUSED THE SPILL. NOT USED FOR DRINKING OR RECREATION. THE WATER IS CHLORINATED.
CONTAINED: **YES**
WATER INVOLVED / WATERWAY: **NOT REPORTED / SEASONAL CREEK**
DATE AND TIME: **3/17/2004**
SITE: **RESIDENCE**
INJURIES: **0**
FATALITIES: **0**
EVACUATIONS: **0**
CLEANUP BY: **N/A**

Back to Report Summary

MAP ID# 5

Distance from Property: 0.018 mi. (95 ft.) N
Elevation: 1,753 ft. (Lower than TP)

FACILITY INFORMATION

REGISTRY ID: **110064896171**

NAME: **DIAMOND VILLAS SENIOR HOUSING**

LOCATION ADDRESS: **PANTHER LANE**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO COUNTY**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

DIAMOND VILLAS SENIOR HOUSING

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

1522 - GENERAL CONTRACTORS-RESIDENTIAL BUILDINGS, OTHER THAN SINGLE-FAMILY

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

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MAP ID# 6

Distance from Property: 0.019 mi. (100 ft.) ENE
Elevation: 1,786 ft. (Higher than TP)

INCIDENT INFORMATION

CONTROL #: **08-5950**
NOTIFIED: **08/15/08**
AGENCY: **EL DORADO IRRIGATION DIST.**
ADMINISTRATION: **EL DORADO COUNTY ENVIRONMENTAL MGMT.**
INCIDENT LOCATION: **CHINA GARDEN AT PLEASANT VALLEY RD.**
DIAMOND SPRINGS, CA
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **WASTE WATER**
QUANTITY: **300**
TYPE: **GAL(S)**

INCIDENT DESCRIPTION

THE WASTE WATER SPILLED INTO A DRAINAGE DITCH.
CONTAINED: **NO**
WATER INVOLVED / WATERWAY: **NO / NOT REPORTED**
DATE AND TIME: **8/15/2008**
SITE: **OTHER**
INJURIES: **0**
FATALITIES: **0**
EVACUATIONS: **0**
CLEANUP BY: **REPORTING PARTY**

Back to Report Summary

Facility Registry System (FRSCA)

MAP ID# 7

Distance from Property: 0.019 mi. (100 ft.) NW
Elevation: 1,767 ft. (Higher than TP)

FACILITY INFORMATION

REGISTRY ID: **110066033820**

NAME: **WARD'S AUTOMOTIVE**

LOCATION ADDRESS: **2189 SUNRISE DR**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

WARD'S AUTOMOTIVE

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

NO SIC DATA REPORTED

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

Back to Report Summary

Hazardous Waste Tanner Summary (HWTS)

MAP ID# 7

Distance from Property: 0.019 mi. (100 ft.) NW
Elevation: 1,767 ft. (Higher than TP)

SITE INFORMATION

EPA ID: **CAL000167531**
NAME: **WARDS AUTOMOTIVE INC**
COUNTY: **NOT REPORTED**
ADDRESS: **2189 SUNRISE DR**
DIAMOND SPRINGS, CA 95619
FACILITY LINK: *Department of Toxic Substances Control*

CONTACT INFORMATION

CONTACT: **WARDS AUTOMOTIVE INC**
PHONE: **NOT REPORTED**
ADDRESS: **NOT REPORTED**
NOT REPORTED NOT REPORTED

MANIFEST SUMMARY INFORMATION

YEAR: **1998**
TSD ID: **NVD982358483**
GENERATOR COUNTY: **EL DORADO**
DISPOSAL COUNTY: **UNKNOWN**
WASTE CATEGORY: **UNSPECIFIED OIL-CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.2418**
DISPOSAL METHOD: **RECYCLER**

YEAR: **1997**
TSD ID: **NVD982358483**
GENERATOR COUNTY: **EL DORADO**
DISPOSAL COUNTY: **UNKNOWN**
WASTE CATEGORY: **UNSPECIFIED OIL-CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.3127**
DISPOSAL METHOD: **RECYCLER**

Back to Report Summary

MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700047**
URL LINK: CLICK HERE
BUSINESS NAME: **FORMER SS**
ADDRESS: **493 MAIN ST**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **90065**
STATUS: **COMPLETED - CASE CLOSED 06/22/1992**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
SOIL
SITE HISTORY:
NOT REPORTED

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
OTHER	**01/01/50**	**LEAK DISCOVERY**
OTHER	**01/01/50**	**LEAK REPORTED**
ENFORCEMENT	**11/13/1996**	**CLOSURE/NO FURTHER ACTION LETTER**
OTHER	**04/01/1992**	**LEAK REPORTED**
OTHER	**02/28/1992**	**LEAK DISCOVERY**

STATUS HISTORY

STATUS:	DATE:
COMPLETED - CASE CLOSED	**06/22/1992**
OPEN - SITE ASSESSMENT	**04/01/1992**
OPEN - CASE BEGIN DATE	**02/28/1992**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE #200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **PETER MINKEL**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **NOT REPORTED**
EMAIL: **PMINKEL@WATERBOARDS.CA.GOV**

Back to Report Summary

Historical Cortese List (HISTCORTESE)

MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **090065COR**
ID#: **090065**
NAME: **FORMER SS**
ADDRESS: **493 MAIN**
DIAMOND SPRINGS, CA 95619

Back to Report Summary

Leaking Underground Storage Tanks (LUST)

MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700047**
URL LINK: CLICK HERE
BUSINESS NAME: **FORMER SS**
ADDRESS: **493 MAIN ST**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **090065**
STATUS: **06/22/1992**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
SOIL
SITE HISTORY:
NOT REPORTED

HISTORICAL FACILITY DETAILS

NO HISTORICAL DETAIL(S) INFORMATION REPORTED FOR THIS FACILITY

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Mineral Resource Data System (MRDS)

MAP ID# 9

Distance from Property: 0.107 mi. (565 ft.) WSW
Elevation: 1,760 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10029926**
DEP ID: **10029926**
MINE NAME: **ROBERT NELSON CLAIM**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **OCCURRENCE**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **ROBERT NELSON CLAIM**
STATUS: **CURRENT**

Back to Report Summary

MAP ID# 9

Distance from Property: 0.107 mi. (565 ft.) WSW
Elevation: 1,760 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10029927**
DEP ID: **10029927**
MINE NAME: **WHEELOCK**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **OCCURRENCE**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **WHEELOCK**
STATUS: **CURRENT**

Back to Report Summary

Superfund Enterprise Management System Archived Site Inventory (SEMSARCH)

MAP ID# 10

Distance from Property: 0.201 mi. (1,061 ft.) WNW
Elevation: 1,762 ft. (Higher than TP)

FACILITY INFORMATION

EPA ID#: **CAD980637417**
SITE ID#: **0901900**
NAME: **OLD CALDOR LUMBER CO YD**
ADDRESS: **HWY 49 & FLAT RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
FEDERAL FACILITY: **NOT A FEDERAL FACILITY**
NPL: **NOT ON THE NPL**
NON NPL STATUS: **NFRAP-SITE DOES NOT QUALIFY FOR THE NPL BASED ON EXISTING INFORMATION**
SEMS SEARCH: **CLICK HERE**

Below information was gathered from the prior NFRAP update completed in 10/2013 update:

ACTION	START DATE	COMPLETION DATE	RESPONSIBILITY
PA - PRELIMINARY ASSESSMENT	**2/1/1985**	**5/1/1985**	**STATE (FUND)**
DS - DISCOVERY	**NOT REPORTED**	**6/1/1981**	**EPA FUND**
PA - PRELIMINARY ASSESSMENT	**NOT REPORTED**	**7/1/1988**	**EPA FUND**
VS - ARCHIVE SITE	**NOT REPORTED**	**7/1/1988**	**EPA IN-HOUSE**

ACTION DESCRIPTIONS

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

DS - (DISCOVERY) - THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

VS - (ARCHIVE SITE) - THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.

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Historical Underground Storage Tanks (HISTUST)

MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



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MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

FACILITY INFORMATION

FACILITY #: **46253**
STATUS: **ACTIVE**
BOE: **44-003046**
JURISDICTION: **EL DORADO COUNTY**
NAME: **EL DORADO UNION HIGH SCHOOL DI**
AGENCY: **ENVIRONMENTAL HEALTH - U.S.T.**
ADDRESS: **4675 MISSOURI FLAT RD**
DIAMOND SPRINGS, CA 95619

TANK INFORMATION

TANK #: **000001**
CAPACITY: **12000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **DIESEL**
CONTAINMENT: **NOT REPORTED**

TANK #: **000002**
CAPACITY: **8000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **REG UNLEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000003**
CAPACITY: **1000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **LEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000004**
CAPACITY: **12000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **DIESEL**
CONTAINMENT: **NOT REPORTED**

TANK #: **000005**
CAPACITY: **8000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **REG UNLEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000006**
CAPACITY: **1000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **LEADED**
CONTAINMENT: **NOT REPORTED**

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Underground Storage Tanks (USTCUPA)

MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **187573130** FACILITY ID: **FA0000680**

NAME: **EDUHSD TRANSPORTATION**

ADDRESS: **4675 MISSOURI FLAT RD**
PLACERVILLE, CA 95667

COUNTY: **EL DORADO**

FACILITY DETAILS

OTHER FACILITY NAME(S) LISTED FOR THIS SITE: **EDUHSD TRANSPORTATION**

PERMIT AGENCY: **EL DORADO COUNTY ENVIRONMENTAL MANAGEMENT**

FACILITY DETAILS LINK: *Click Here*

Back to Report Summary

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T10000009244**
URL LINK: CLICK HERE
BUSINESS NAME: **WASTE CONNECTIONS**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **CLEANUP PROGRAM SITE**
CASE NUMBER: **NOT REPORTED**
STATUS: **OPEN - SITE ASSESSMENT 08/12/2016**
POTENTIAL CONTAMINATION:
OTHER ACID OR CORROSIVE
POTENTIAL MEDIA AFFECTED:
NOT REPORTED
SITE HISTORY:
SITE WAS CONSTRUCTED ON A FORMER LIME PROCESSING FACILITY. LIME WASTE BENEATH SITE HAS ELEVATED PH AND THREATENS GROUNDWATER.

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**06/18/2018**	**STAFF LETTER**
RESPONSE	**04/24/2018**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**01/31/2018**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**01/31/2018**	**NOTIFICATION - PUBLIC PARTICIPATION DOCUMENT**
ENFORCEMENT	**12/11/2017**	**STAFF LETTER**
RESPONSE	**11/15/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**11/14/2017**	**CORRESPONDENCE**
ENFORCEMENT	**11/08/2017**	**STAFF LETTER**
ENFORCEMENT	**10/24/2017**	**LETTER - NOTICE**
RESPONSE	**10/24/2017**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**10/15/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**10/03/2017**	**FEASIBILITY STUDY REPORT**
RESPONSE	**07/31/2017**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**06/09/2017**	**STAFF LETTER**
RESPONSE	**05/25/2017**	**SITE INVESTIGATION**
ENFORCEMENT	**02/10/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**02/10/2017**	**CORRESPONDENCE**
ENFORCEMENT	**02/08/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**02/08/2017**	**SOIL AND WATER INVESTIGATION WORKPLAN**
ENFORCEMENT	**02/07/2017**	**STAFF LETTER**
ENFORCEMENT	**02/06/2017**	**STAFF LETTER**
RESPONSE	**01/30/2017**	**SITE INVESTIGATION WORKPLAN**
RESPONSE	**01/24/2017**	**SOIL AND WATER INVESTIGATION REPORT**

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**11/04/2016**	**EMAIL CORRESPONDENCE**
RESPONSE	**10/17/2016**	**SITE INVESTIGATION WORKPLAN**
ENFORCEMENT	**09/08/2016**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**08/15/2016**	**STAFF LETTER**
RESPONSE	**07/22/2016**	**SITE INVESTIGATION**

STATUS HISTORY

STATUS:	DATE:
OPEN - SITE ASSESSMENT	**08/12/2016**
OPEN - CASE BEGIN DATE	**07/22/2016**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE, SUITE 200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **WALTER FLOYD**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **9164644651**
EMAIL: **WALTER.FLOYD@WATERBOARDS.CA.GOV**

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Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0674**
NAME: **MATERIAL RECOVERY FACILITY**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **12/23/96**
OPERATION END DATE: **07/19/00**
PROGRAM PHONE: **(530) 642-0731**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **NOT ACCEPTED**

Back to Report Summary

Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0880**
NAME: **EL DORADO DISPOSAL SERVICE MRF**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **9/22/2006**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

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Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0961**
NAME: **SEI SOLID WASTE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **3/9/2009**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

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Listing of Certified Processors (PROC)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **PR0439**
NAME: **EL DORADO DISPOSAL SERVICE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **10/12/2006**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0004SWIS**
ID NUMBER: **09-AA-0004**
NAME: **WESTERN EL DORADO RECOVERY SYSTEMS MRF**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.698960000**
LONGITUDE: **-120.815620000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS OF CALIFORNIA, INC.**
ADDRESS: **10001 WOODLOCH FOREST DRIVE, SUITE 400**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO REG SYSTEM**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **384**
LAND USE: **NOT REPORTED**
PERMIT DATE: **2/23/2005**
PERMIT STATUS: **PERMITTED**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **TRANSFER/PROCESSING**
UNIT #: **01**
REGULATORY STATUS: **PERMITTED**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **LARGE VOLUME TRANSFER/PROC FACILITY**
INSPECTION: **MONTHLY**
ACCEPTED WASTE: **MIXED MUNICIPAL**
CAPACITY: **400**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **400**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

Back to Report Summary

Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0006SWIS**
ID NUMBER: **09-AA-0006**
NAME: **WEDRS-GREEN WASTE RECYCLING CENTER**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.699250000**
LONGITUDE: **-120.815810000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS, INC.**
ADDRESS: **3 WATERWAY SQUARE PLACE, SUITE 110**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO SERVICES, INC.**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **10521**
LAND USE: **COMMERCIAL**
PERMIT DATE: **8/5/2014**
PERMIT STATUS: **NOTIFICATION**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **COMPOSTING**
UNIT #: **01**
REGULATORY STATUS: **NOTIFICATION**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **CHIPPING AND GRINDING ACTIVITY FAC./ OP.**
INSPECTION: **QUARTERLY**
ACCEPTED WASTE: **GREEN MATERIALS**
CAPACITY: **72600**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **200**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

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Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0007SWIS**
ID NUMBER: **09-AA-0007**
NAME: **WEDRS- CDI RECOVETY OPERATION (MVCDI)**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.699250000**
LONGITUDE: **-120.815810000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS, INC.**
ADDRESS: **3 WATERWAY SQUARE PLACE, SUITE 110**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO SERVICES, INC.**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **10522**
LAND USE: **NOT REPORTED**
PERMIT DATE: **6/10/2009**
PERMIT STATUS: **PERMITTED**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **TRANSFER/PROCESSING**
UNIT #: **01**
REGULATORY STATUS: **PERMITTED**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **MEDIUM VOL CD WOOD DEBRIS CHIPGRIND FAC.**
INSPECTION: **MONTHLY**
ACCEPTED WASTE: **CONSTRUCTION/DEMOLITION,INERT,METALS,WOOD WASTE**
CAPACITY: **63525**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **175**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

Back to Report Summary

Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0880**
NAME: **EL DORADO DISPOSAL SERVICE MRF**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **09/22/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1171**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **05/19/05**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **PO BOX 1270**
DIAMOND SPRINGS CA 95619
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1234**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1235**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

Back to Report Summary

Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1236**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS19394.001**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/15/16**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **PR0439**
NAME: **EL DORADO DISPOSAL SERVICE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **10/12/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC10531**
NAME: **WESTERN EL DORADO RECOVERY SYSTEMS**
ADDRESS: **4100 THROWITA WY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/30/00**
OPERATION END DATE: **11/09/06**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 13

Distance from Property: 0.396 mi. (2,091 ft.) WNW
Elevation: 1,816 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC10654**
NAME: **MISSOURI FLAT RECYCLE CENTER**
ADDRESS: **4600 MISSOURI FLAT RD**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **02/06/01**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

FACILITY INFORMATION

ID #: **09750002**

NAME: **FOOTHILL AUTO REPAIR**

ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA

STATUS (DATE): **PROPERTY/SITE REFERRED TO RWQCB (07/15/1987)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:
AUTO REPAIR, SERVICES & PARKING

ACCESS TO SITE: **CONTROLLED**

GROUNDWATER CONTAMINATION: **NOT REPORTED**

COMMENTS

FACILITY IDENTIFIED EL DORADO CO HEALTH RECEIVED A COMPLAINT OF POSSIBLE WELL WATER CONTAMINATION. INSPECTION(LOCAL) EL DORADO CO HLTH/CENTRAL VALLEY RWQCB OPERATOR ALLOWED SOLVENTS, ANTIFREEZE, AND WASTE OIL TO FLOW TO GROUND FACILITY DRIVE-BY DHS (SSP); STAINED SOIL, POOR HOUSEKEEP DHS RECORDS SEARCH-NO FILE FOUND STATE LANDS COMMISSION DEPT. OF WATER RESOURCES PRELIM ASSESS DONE PENDING PER CVRWQCB WELL WATER SAMPLES SAMPLE RESULTS NFA BASED ON CVRWQCB SAMPLES; NO DETECTABLE LIMITS (<.5) OF MISC. PETROLEUM PRODUCTS (GASOLINE & SOLVENTS)

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MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

SITE INFORMATION

ID #: **09750002** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **FOOTHILL AUTO REPAIR**
ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 07/15/1987)
REFER: RWQCB -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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Referred to Another Local or State Agency (REF)

MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **9750002**
ENVIROSTOR ID: **9750002**
FACILITY NAME: **FOOTHILL AUTO REPAIR**
ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

PROGRAM TYPE: **EVALUATION**
STATUS: **REFER: RWQCB**
STATUS DATE: **7/15/1987**
CALENVIROSCREEN SCORE: **36-40%**
SITE CODE: **NOT REPORTED**

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Historical Cortese List (HISTCORTESE)

MAP ID# 15

Distance from Property: 0.403 mi. (2,128 ft.) N
Elevation: 1,801 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **6A189101N25COR**
ID#: **6A189101N25**
NAME: **GUSTAFSON D M & PATRICI**
ADDRESS: **3655 CHUCKWAGON**
PLACERVILLE, CA 95667

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MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700077**
URL LINK: CLICK HERE
BUSINESS NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **90096**
STATUS: **COMPLETED - CASE CLOSED 01/02/2013**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
AQUIFER USED FOR DRINKING WATER SUPPLY
SITE HISTORY:
THE FIRST THREE MONITORING WELLS WERE INSTALLED ON SITE IN NOVEMBER 1999. BY THE TIME OF THE INITIATION OF THE OFF SITE INVESTIGATION IN THE FALL OF 2001, THE AVERAGE REPORTED MTBE CONCENTRATIONS IN THESE THREE WELLS WAS 50,083 ÌG/L. THE AVERAGE CONCENTRATION IN THESE THREE WELLS FOR THE LAST FOUR SEMI-ANNUAL MONITORING EVENTS IS 566 ÌG/L. THIS REPRESENTS A 98.9 PERCENT REDUCTION SINCE ONSITE REMEDIATION BEGAN IN EARLY 2002. OFF SITE INVESTIGATION CONTINUED THROUGH TO THE SUMMER OF 2004 WITH CONCURRENT REMEDIAL ACTIVITIES. BY AUGUST 2004 THERE WERE 29 MONITORING WELLS AND TWO EXTRACTION WELLS IN USE. ELEVEN OF THE MONITORING WELLS DEFINE THE OUTWARD EXTENT OR EDGES OF THE MTBE PLUME, COMPRISING THE WELLS THAT HAVE CONSISTENTLY BEEN REPORTED WITH MTBE BELOW THE DRINKING WATER STANDARD. A SENSITIVE RECEPTOR SURVEY WAS COMPLETED IN LATE 2000. THERE WERE NO WATER SUPPLY WELLS LOCATED WITHIN THE EXTENT OF THE PLUME, LATER DEFINED, AND ONLY FIVE WELLS WERE FOUND IN THE 2000 FOOT SEARCH RADIUS. THE CLOSEST WAS OVER 500 FEET CROSS GRADIENT OF THE PLUME AND HAS SUBSEQUENTLY BEEN REMOVED. GROUNDWATER AS A POTENTIAL SOURCE VAPOR EMANATIONS WAS ADDRESSED IN WORKPLAN DATED JANUARY 26, 2007 INDICATING THAT THERE WERE NO AREAS THAT COULD POTENTIALLY BE IMPACTED TO INVESTIGATE. THIS WAS AFFIRMED IN THE WORKPLAN APPROVAL LETTER FROM THE REGIONAL BOARD DATED 6 FEBRUARY 2007. PATTERSON LAKE IS SITUATED DOWNGRADIENT OF THE SOUTHWESTERLY DIRECTED PLUME THAT ORIGINATED AT THE PROPERTY NOW OWNED BY TOWER ENERGY GROUP. THE LAKE HAS FUNCTIONED AS A HYDRAULIC BARRIER, LOWERING THE GROUNDWATER GRADIENT IN ITS AREA AND SLOWING THE PREREMEDIAL ADVANCEMENT OF THE PLUME. THREE 10,000 GALLON UST'S AND ASSOCIATED PIPING WERE REMOVED FROM THE SITE IN THE SUMMER OF 2010 STATION UPGRADES ACTIVITIES.

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
OTHER	**01/01/50**	**LEAK BEGAN**
OTHER	**01/01/50**	**LEAK DISCOVERY**
OTHER	**01/01/50**	**LEAK REPORTED**
OTHER	**01/01/50**	**LEAK STOPPED**
REMEDIATION	**01/01/50**	**IN SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN SVE)**
REMEDIATION	**01/01/50**	**OTHER (USE DESCRIPTION FIELD)**
REMEDIATION	**01/01/50**	**PUMP & TREAT (P&T) GROUNDWATER**
ENFORCEMENT	**01/02/2013**	**CLOSURE/NO FURTHER ACTION LETTER**

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	10/30/2012	LOP CASE CLOSURE SUMMARY TO RB
ENFORCEMENT	09/30/2012	LETTER - NOTICE
ENFORCEMENT	08/24/2012	STAFF LETTER
ENFORCEMENT	06/08/2012	STAFF LETTER
ENFORCEMENT	02/16/2012	STAFF LETTER
ENFORCEMENT	08/25/2010	STAFF LETTER
ENFORCEMENT	08/12/2010	STAFF LETTER
ENFORCEMENT	08/12/2010	STAFF LETTER
ENFORCEMENT	04/11/2010	STAFF LETTER
ENFORCEMENT	02/27/2009	STAFF LETTER
ENFORCEMENT	10/01/2008	LETTER - NOTICE
RESPONSE	04/30/2008	REMEDIAL PROGRESS REPORT
RESPONSE	04/30/2008	OTHER REPORT / DOCUMENT
RESPONSE	01/31/2008	REMEDIAL PROGRESS REPORT
RESPONSE	10/30/2007	OTHER REPORT / DOCUMENT
RESPONSE	07/30/2007	REMEDIAL PROGRESS REPORT
RESPONSE	04/30/2007	INTERIM REMEDIAL ACTION REPORT
RESPONSE	04/30/2007	MONITORING REPORT - QUARTERLY
ENFORCEMENT	04/10/2007	MEETING
ENFORCEMENT	02/06/2007	STAFF LETTER
ENFORCEMENT	02/01/2007	SITE VISIT / INSPECTION / SAMPLING
RESPONSE	01/31/2007	OTHER WORKPLAN
RESPONSE	01/31/2007	OTHER REPORT / DOCUMENT
RESPONSE	01/31/2007	MONITORING REPORT - QUARTERLY
RESPONSE	12/29/2006	OTHER REPORT / DOCUMENT
ENFORCEMENT	12/19/2006	STAFF LETTER
RESPONSE	10/31/2006	MONITORING REPORT - QUARTERLY
ENFORCEMENT	10/24/2006	VERBAL COMMUNICATION
RESPONSE	07/30/2006	MONITORING REPORT - QUARTERLY
RESPONSE	04/30/2006	MONITORING REPORT - QUARTERLY
RESPONSE	01/31/2006	MONITORING REPORT - QUARTERLY
RESPONSE	10/31/2005	MONITORING REPORT - QUARTERLY
RESPONSE	07/15/2005	MONITORING REPORT - QUARTERLY
REMEDIATION	07/11/2005	IN SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN SVE)
RESPONSE	04/30/2005	MONITORING REPORT - QUARTERLY
RESPONSE	01/31/2005	MONITORING REPORT - QUARTERLY
RESPONSE	10/15/2004	MONITORING REPORT - QUARTERLY
RESPONSE	07/15/2004	MONITORING REPORT - QUARTERLY
ENFORCEMENT	04/15/2004	STAFF LETTER
RESPONSE	04/15/2004	MONITORING REPORT - QUARTERLY
RESPONSE	04/09/2004	OTHER WORKPLAN
REMEDIATION	03/05/2004	PUMP & TREAT (P&T) GROUNDWATER
ENFORCEMENT	02/27/2004	STAFF LETTER
RESPONSE	01/15/2004	MONITORING REPORT - QUARTERLY

TYPE OF ACTION:	DATE:	ACTION:
RESPONSE	**10/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**07/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**04/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**01/15/2003**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**07/26/2002**	**FILE REVIEW**
ENFORCEMENT	**07/25/2002**	**FILE REVIEW**
ENFORCEMENT	**02/25/2002**	**FILE REVIEW**
ENFORCEMENT	**10/17/2001**	**STAFF LETTER**
REMEDIATION	**08/03/2001**	**OTHER (USE DESCRIPTION FIELD)**
ENFORCEMENT	**07/11/2001**	**STAFF LETTER**
ENFORCEMENT	**04/20/2001**	**STAFF LETTER**
ENFORCEMENT	**10/24/2000**	**STAFF LETTER**
ENFORCEMENT	**05/26/2000**	**STAFF LETTER**
ENFORCEMENT	**07/23/1997**	**REFERRAL TO REGIONAL BOARD**
OTHER	**07/23/1997**	**LEAK BEGAN**
OTHER	**07/23/1997**	**LEAK STOPPED**
OTHER	**07/23/1997**	**LEAK REPORTED**
OTHER	**06/22/1997**	**LEAK DISCOVERY**
RESPONSE	**04/15/0204**	**MONITORING REPORT - QUARTERLY**

STATUS HISTORY

STATUS:	DATE:
COMPLETED - CASE CLOSED	**01/02/2013**
OPEN - ELIGIBLE FOR CLOSURE	**10/10/2012**
OPEN - VERIFICATION MONITORING	**11/06/2009**
OPEN - REMEDIATION	**03/08/2008**
OPEN - REMEDIATION	**03/06/2008**
OPEN - REMEDIATION	**07/30/2007**
OPEN - REMEDIATION	**07/11/2005**
OPEN - REMEDIATION	**04/08/2004**
OPEN - SITE ASSESSMENT	**04/18/2001**
OPEN - SITE ASSESSMENT	**12/01/2000**
OPEN - CASE BEGIN DATE	**06/22/1997**
OPEN - SITE ASSESSMENT	**06/22/1997**

CONTACT DETAILS

ORGANIZATION: **EL DORADO COUNTY**

ADDRESS: **2850 FAIRLANE CT., BUILDING C**

CITY: **PLACERVILLE**

CONTACT NAME: **ROBERT LAURITZEN**

CONTACT TYPE: **LOCAL AGENCY CASEWORKER**

CONTACT PHONE: **NOT REPORTED**

EMAIL: **ROBERT.LAURITZEN@EDCGOV.US**

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Historical Cortese List (HISTCORTESE)

MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **090096COR**
ID#: **090096**
NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY**
DIAMOND SPRINGS, CA 95619

Back to Report Summary

Leaking Underground Storage Tanks (LUST)

MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700077**
URL LINK: CLICK HERE
BUSINESS NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **090096**
STATUS: **01/02/2013**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
AQUIFER USED FOR DRINKING WATER SUPPLY
SITE HISTORY:
THE FIRST THREE MONITORING WELLS WERE INSTALLED ON SITE IN NOVEMBER 1999. BY THE TIME OF THE INITIATION OF THE OFF SITE INVESTIGATION IN THE FALL OF 2001, THE AVERAGE REPORTED MTBE CONCENTRATIONS IN THESE THREE WELLS WAS 50,083 ÌG/L. THE AVERAGE CONCENTRATION IN THESE THREE WELLS FOR THE LAST FOUR SEMI-ANNUAL MONITORING EVENTS IS 566 ÌG/L. THIS REPRESENTS A 98.9 PERCENT REDUCTION SINCE ONSITE REMEDIATION BEGAN IN EARLY 2002. OFF SITE INVESTIGATION CONTINUED THROUGH TO THE SUMMER OF 2004 WITH CONCURRENT REMEDIAL ACTIVITIES. BY AUGUST 2004 THERE WERE 29 MONITORING WELLS AND TWO EXTRACTION WELLS IN USE. ELEVEN OF THE MONITORING WELLS DEFINE THE OUTWARD EXTENT OR EDGES OF THE MTBE PLUME, COMPRISING THE WELLS THAT HAVE CONSISTENTLY BEEN REPORTED WITH MTBE BELOW THE DRINKING WATER STANDARD. A SENSITIVE RECEPTOR SURVEY WAS COMPLETED IN LATE 2000. THERE WERE NO WATER SUPPLY WELLS LOCATED WITHIN THE EXTENT OF THE PLUME, LATER DEFINED, AND ONLY FIVE WELLS WERE FOUND IN THE 2000 FOOT SEARCH RADIUS. THE CLOSEST WAS OVER 500 FEET CROSS GRADIENT OF THE PLUME AND HAS SUBSEQUENTLY BEEN REMOVED. GROUNDWATER AS A POTENTIAL SOURCE VAPOR EMANATIONS WAS ADDRESSED IN WORKPLAN DATED JANUARY 26, 2007 INDICATING THAT THERE WERE NO AREAS THAT COULD POTENTIALLY BE IMPACTED TO INVESTIGATE. THIS WAS AFFIRMED IN THE WORKPLAN APPROVAL LETTER FROM THE REGIONAL BOARD DATED 6 FEBRUARY 2007. PATTERSON LAKE IS SITUATED DOWNGRADIENT OF THE SOUTHWESTERLY DIRECTED PLUME THAT ORIGINATED AT THE PROPERTY NOW OWNED BY TOWER ENERGY GROUP. THE LAKE HAS FUNCTIONED AS A HYDRAULIC BARRIER, LOWERING THE GROUNDWATER GRADIENT IN ITS AREA AND SLOWING THE PREREMEDIAL ADVANCEMENT OF THE PLUME. THREE 10,000 GALLON UST'S AND ASSOCIATED PIPING WERE REMOVED FROM THE SITE IN THE SUMMER OF 2010 STATION UPGRADES ACTIVITIES.

HISTORICAL FACILITY DETAILS

NO HISTORICAL DETAIL(S) INFORMATION REPORTED FOR THIS FACILITY

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MAP ID# 17

Distance from Property: 0.481 mi. (2,540 ft.) NNE
Elevation: 1,819 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T10000010458**
URL LINK: CLICK HERE
BUSINESS NAME: **ABEL TRUST**
ADDRESS: **4061 LIME PLANT ROAD**
DIAMOND SPRINGS, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **CLEANUP PROGRAM SITE**
CASE NUMBER: **NOT REPORTED**
STATUS: **OPEN - ACTIVE 06/09/2017**
POTENTIAL CONTAMINATION:
OTHER ACID OR CORROSIVE
POTENTIAL MEDIA AFFECTED:
NOT REPORTED
SITE HISTORY:
NOT REPORTED

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**04/09/2018**	**STAFF LETTER**
RESPONSE	**03/16/2018**	**REMOVAL ACTION WORK PLAN**
ENFORCEMENT	**02/06/2018**	**STAFF LETTER**
RESPONSE	**02/01/2018**	**CORRESPONDENCE**
ENFORCEMENT	**01/22/2018**	**STAFF LETTER**
RESPONSE	**01/12/2018**	**SITE INVESTIGATION**
ENFORCEMENT	**11/15/2017**	**LETTER - NOTICE**
RESPONSE	**11/06/2017**	**PRELIMINARY SITE ASSESSMENT WORKPLAN**
ENFORCEMENT	**10/26/2017**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**05/16/2017**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**04/17/2017**	**13267 REQUIREMENT**
ENFORCEMENT	**11/15/2016**	**LETTER - NOTICE**

STATUS HISTORY

STATUS:	DATE:
OPEN - ACTIVE	**06/09/2017**
OPEN - CASE BEGIN DATE	**11/15/2016**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE, SUITE 200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **WALTER FLOYD**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **9164644651**
EMAIL: **WALTER.FLOYD@WATERBOARDS.CA.GOV**

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MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

FACILITY INFORMATION

ID #: **09340001**

NAME: **CELEBRITY PLATING**

ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA

STATUS (DATE): **PRELIMINARY ENDANGERMENT ASSESSMENT REQUIRED (04/14/1997)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:
MANU - FABRICATED METAL PRODUCTS

ACCESS TO SITE: **NOT REPORTED**

GROUNDWATER CONTAMINATION: **NOT REPORTED**

COMMENTS

SITE SCREENING COMPLETED. EL DORADO COUNTY HEALTH DEPARTMENT SUBMITTED AN INVESTIGATION REPORT TO DTSC FOR REVIEW AND COMMENT. DTSC STAFF PERFORMED A CURSORY REVIEW OF THE REPORT AND CONDUCTED A SITE VISIT. THE HOUSEKEEPING PRACTICES IN THE PLATING AREA WERE POOR. MOST OF THE FLOOR AND WALLS SHOWED SIGNS OF SPILLS AND LEAKS. SOIL SAMPLES FROM BENEATH THE FLOOR WERE CONTAMINATED WITH 42 PPM CYANIDE, 159 PPM CHROMIUM, 123 PPM COPPER, 1010 PPM NICKEL AND OTHER METALS. A PRELIMINARY ENDANGERMENT ASSESSMENT IS REQUIRED TO DETER-THE POTENTIAL THREAT POSED BY ONSITE CONTAMINATION.

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MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **09340001** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY PLATING**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **10**
LEAD AGENCY: **HWMP**
DTSC PROJECT MANAGER: **LANCE MCMAHAN**
DTSC SUPERVISOR: **NOEL SHRUM**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **CORRECTIVE ACTION**
SITE TYPE DESCRIPTION
INVESTIGATION AND CLEANUP ACTIVITIES AT HAZARDOUS WASTE FACILITIES (EITHER RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) OR STATE-ONLY) THAT EITHER WERE ELIGIBLE FOR A PERMIT OR RECEIVED A PERMIT, ARE CALLED CORRECTIVE ACTION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 04/05/2010)
NO FURTHER ACTION - IDENTIFIES COMPLETED SITES WHERE DTSC DETERMINED AFTER INVESTIGATION, GENERALLY A PEA (AN INITIAL ASSESSMENT), THAT THE PROPERTY DOES NOT POSE A PROBLEM TO PUBLIC HEALTH OR THE ENVIRONMENT
PAST USE/S THAT CAUSED THE CONTAMINATION
HAZARDOUS WASTE TREATMENT, METAL PLATING - CHROME
CONFIRMED CONTAMINANTS OF CONCERN
30152 - CHROMIUM III
30153 - CHROMIUM VI
30160 - CYANIDE (FREE)
30406 - NICKEL (SOLUBLE SALTS)

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MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **71003046** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY, INC.**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **NOT REPORTED**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **NOT REPORTED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **TIERED PERMIT**
SITE TYPE DESCRIPTION
NOT REPORTED
DTSC's CURRENT INVOLVEMENT AT SITE (as of 07/07/2003)
NO ACTION REQUIRED - IDENTIFIES SITES WHERE A PHASE I ENVIRONMENTAL ASSESSMENT WAS COMPLETED AND RESULTED IN A NO ACTION REQUIRED DETERMINATION
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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No Further Action Determination (NFA)

MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **71003046**
ENVIROSTOR ID: **71003046**
FACILITY NAME: **CELEBRITY, INC.**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

PROGRAM TYPE: **TIERED PERMIT**
STATUS: **NO ACTION REQUIRED**
STATUS DATE: **7/7/2003**
CALENVIROSCREEN SCORE: **36-40%**
SITE CODE: **101525**

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Recycling Centers (SWRCY)

MAP ID# 19

Distance from Property: 0.498 mi. (2,629 ft.) N
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC4019**
NAME: **E M RECYCLING**
ADDRESS: **4040 #A-2 STAGE CT**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **01/09/91**
OPERATION END DATE: **01/07/93**
PROGRAM PHONE: **(916) 621-2027**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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MAP ID# 20

Distance from Property: 0.522 mi. (2,756 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **09500006** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **TETERS AUTO WRECKERS**
ADDRESS: **4487 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 09/12/1995)
REFER: OTHER AGENCY -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 21

Distance from Property: 0.641 mi. (3,384 ft.) WNW
Elevation: 1,757 ft. (Lower than TP)

SITE INFORMATION

ID #: **71003697** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY, INC.**
ADDRESS: **6650 MERCHANDISE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **NOT REPORTED**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **NOT REPORTED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **TIERED PERMIT**
SITE TYPE DESCRIPTION
NOT REPORTED
DTSC's CURRENT INVOLVEMENT AT SITE (as of)
NO ACTION REQUIRED - IDENTIFIES SITES WHERE A PHASE I ENVIRONMENTAL ASSESSMENT WAS COMPLETED AND RESULTED IN A NO ACTION REQUIRED DETERMINATION
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 22

Distance from Property: 0.683 mi. (3,606 ft.) ENE
Elevation: 1,848 ft. (Higher than TP)

SITE INFORMATION

ID #: **09280001** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **OXYGEN SERVICE AND SUPPLY COMPANY**
ADDRESS: **13 CHINA GARDEN ROAD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 05/31/1988)
REFER: OTHER AGENCY -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 23

Distance from Property: 0.818 mi. (4,319 ft.) WNW
Elevation: 1,794 ft. (Higher than TP)

SITE INFORMATION

ID #: **09730001** ASSESSOR'S PARCEL #: **32924051**
URL LINK: CLICK HERE
NAME: **OLD CALDOR LUMBER COMPANY YARD**
ADDRESS: **180 INDUSTRIAL DRIVE**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **STEVEN BECKER**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **HISTORICAL**
SITE TYPE DESCRIPTION
HISTORICAL: IDENTIFIES SITES FROM AN OLDER DATABASE WHERE NO SITE TYPE WAS IDENTIFIED. MOST OF THESE SITES HAVE A STATUS OF REFERRED OR NO FURTHER ACTION. DTSC IS WORKING TO CLEAN UP THIS DATA BY IDENTIFYING AN APPROPRIATE SITE TYPE FOR EACH "HISTORIC" SITE.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 02/27/1989)
NO FURTHER ACTION - IDENTIFIES COMPLETED SITES WHERE DTSC DETERMINED AFTER INVESTIGATION, GENERALLY A PEA (AN INITIAL ASSESSMENT), THAT THE PROPERTY DOES NOT POSE A PROBLEM TO PUBLIC HEALTH OR THE ENVIRONMENT
PAST USE/S THAT CAUSED THE CONTAMINATION
MANUFACTURING - LUMBER/WOOD PRODUCTS
CONFIRMED CONTAMINANTS OF CONCERN
NONE SPECIFIED

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Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

Database Name	Site ID#	Site Name	Address	City/State/Zip/County
DROP	CP0005	BOB'S SALVAGE	4000 UNION MINE RD	DIAMOND SPRINGS, CA 95619 EL DORADO
HISTUST	00023440	DIAMOND INDUSTRIAL PARK	NONE BRIGHT COURT	DIAMOND SPRINGS, CA 95619 El Dorado
SWEEPS	A09-000-34834	DIAMOND INDUSTRIAL PARK	BRIGHT CT	DIAMOND SPRINGS, CA 95619

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/15

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 10/05/17

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 08/03/15

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ECHOR09 Enforcement and Compliance History Information

VERSION DATE: 09/01/18

The EPA's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSCA Emergency Response Notification System

VERSION DATE: 10/28/18

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSCA Facility Registry System

VERSION DATE: 10/09/18

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR09 Hazardous Materials Incident Reporting System

VERSION DATE: 09/30/18

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 09/01/18

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 07/09/17

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 06/29/17

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements. Disclaimer: Due to agency regulations and policies, this database contains applicant/licensee location information which may or may not be related to the physical location per MLTS site.

NPDESR09 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES database was collected from December 2002 until April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data.This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

PADS PCB Activity Database System

VERSION DATE: 09/14/18

PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

PCSR09 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 09/26/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

SEMSLIENS SEMS Lien on Property

VERSION DATE: 08/13/18

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs. This is a listing of SEMS sites with a lien on the property.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of

these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete.

SSTS Section Seven Tracking System

VERSION DATE: 02/01/17

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/16

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/12

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

RCRAGR09 Resource Conservation & Recovery Act - Generator

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

RCRANGR09 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-generators. Non-Generators do not presently generate hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 09/01/18

Nationwide list of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

FEMAUST FEMA Owned Storage Tanks

VERSION DATE: 12/01/16

This is a listing of FEMA owned underground and aboveground storage tank sites. For security reasons, address information is not released to the public according to the U.S. Department of Homeland Security.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

ICISCLEANERS Integrated Compliance Information System Drycleaners

VERSION DATE: 09/01/18

This is a listing of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that
possess NAIC and SIC codes that classify businesses as drycleaner establishments.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 08/31/18

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 10/01/18

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

DNPL Delisted National Priorities List

VERSION DATE: 11/14/18

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 03/01/18

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

SEMS Superfund Enterprise Management System

VERSION DATE: 08/13/18

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 08/13/18

The Superfund Enterprise Management System Archive listing (SEMS-ARCHIVE) has replaced the CERCLIS NFRAP reporting system in 2015. This listing reflect sites that have been assessed and no further remediation is planned and is of no further interest under the Superfund program.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 09/14/18

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

DOD Department of Defense Sites

VERSION DATE: 12/01/14

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 06/01/15

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 03/01/18

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites.
During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 11/14/18

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 11/14/18

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RODS Record of Decision System

VERSION DATE: 08/13/18

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

CDL Clandestine Drug Labs

VERSION DATE: 12/31/17

The California Department of Toxic Substance Control (DTSC) provides this listing of illegal drug laboratories. Pursuant to Section 25354.5 of the California Health and Safety Code, DTSC conducts emergency removal actions at clandestine drug labs at the request of State and local law enforcement agencies. DTSC's contractors typically remove hazardous substances that may pose an immediate threat to public health and the environment while the enforcement officials are on scene. During the emergency removal actions, contractors remove and properly dispose of contaminated lab equipment, chemicals used to make the illegal drugs (usually methamphetamine), lab chemical wastes, and other grossly contaminated materials. DTSC does not perform additional assessment work beyond standard emergency removal actions and makes no further determination regarding the need for future cleanup work at the emergency removal location. The reported location information may or may not include the actual location of the illegal drug lab. The DTSC does not guarantee the accuracy of the address or location information or the condition of the location listed.

CHMIRS California Hazardous Material Incident Report System

VERSION DATE: 10/24/18

The California Hazardous Material Incident Report System database is provided by the California Emergency Management Agency. This database contains accidental or spill release information from reported hazardous material incidents since 1993.

DTSCDR DTSC Deed Restrictions

VERSION DATE: 10/07/18

The California Department of Toxic Substances Control (DTSC) maintains this listing of sites with deed restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities. The land use restrictions listed under the site management requirements are only an abbreviated summary of the land use restrictions, and may not encompass all restrictions and notification requirements placed on a property. For complete land use restriction information please contact the DTSC to review associated Land Use Restriction documents.

EMI Emissions Inventory Data

VERSION DATE: 12/31/16

The Air Resources Board's Emissions Inventory Database contains criteria pollutant data and toxic data on facilities throughout the state of California for the 2012-2000 inventory years.

HWTS Hazardous Waste Tanner Summary

VERSION DATE: 12/31/17

This data is prepared from information extracted from copies of hazardous waste manifests received each year by the Department of Toxic Substances Control. The Hazardous Waste Summary Report (Tanner Report) currently includes manifest data from the 1993 through the 2016 reporting years.

LDS Land Disposal Sites

VERSION DATE: 10/09/18

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

LIENS Recorded Environmental Cleanup Liens

VERSION DATE: 05/17/18

The California Department of Toxic Substance Control (DTSC) maintains this listing of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

MCS Military Cleanup Sites

VERSION DATE: 07/09/18

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater

NPDES National Pollutant Discharge Elimination System Facilities

VERSION DATE: 09/04/18

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

ABST Above Ground Storage Tanks

VERSION DATE: 09/13/18

This database, provided by the California Environmental Protection Agency's (CalEPA) Regulated Site Portal, contains aboveground petroleum storage tank facilities originating from the California Environmental Reporting System (CERS). These facilities store petroleum in aboveground storage tanks with oversight by local agencies. As of January 1, 2008, Assembly Bill No. 1130 of the Aboveground Petroleum Storage Act (APSA) authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. CalEPA Data Disclaimer: Information displayed in the portal is collected from separate agency databases and displayed unaltered. Information that is considered confidential, trade secret, or is otherwise protected by the agency that

manages the database is not loaded into the portal. For more detail about information displayed in the portal, please visit the data source sites. Please refer to AST2007 database for aboveground storage tank information obtained from the California State Water Resources Control Board prior to 2008 APSA requirements.

AST2007 Aboveground Storage Tanks Prior to January 2008

VERSION DATE: 12/01/07

This database contains aboveground storage tank facilities registered with the California State Water Resources Control Board (SWRCB) between 2007 and 2003. Since 2006, tanks were required to contain a minimum (even as cumulative) of 1320 gallons to be in the program. As of January 1, 2008, the SWRCB no longer maintains a list of registered aboveground storage tanks, due to effective Assembly Bill No. 1130 (Laird) of the Aboveground Petroleum Storage Act (APSA). This Bill authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. Please refer to ABST database as a current source for aboveground petroleum storage tank data.

CLEANER Dry Cleaner Facilities

VERSION DATE: 06/20/18

This database, created by accessing the California Department of Toxic Substances Control's (DTSC) Hazardous Waste Tracking System, includes dry cleaner facilities that have registered EPA identification numbers. These facilities are categorized with one of the following NAICS Codes: 81231 or 81232. This database may also include facilities other than dry cleaners who also register with these same NAICS Codes. Not all companies report their NAICS/SIC Codes to the DTSC and therefore this database may exclude registered dry cleaner facilities with incomplete classification information.

DTSCHWT DTSC Registered Hazardous Waste Transporters

VERSION DATE: 10/14/18

The Department of Toxic Substances Control provides this list of Registered Hazardous Waste Transporters.

HISTUST Historical Underground Storage Tanks

VERSION DATE: 12/31/87

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987 by the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

MINES Mines Listing

VERSION DATE: 07/31/18

This database includes mine site locations from the California Office of Mine Reclamation.

MWMP California Medical Waste Management Program Facility List

VERSION DATE: 06/29/18

To protect the public and the environment from potential infectious exposure to disease causing agents, the Medical Waste Management Program (MWMP), in the Environmental Management Branch of the California Department of Public Health, regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations.

SLIC Spills, Leaks, Investigation & Cleanup Recovery Listing

VERSION DATE: 06/16/08

These records are maintained by the California Regional Water Quality Control Board (RWQCB). This list includes contaminated sites that impact groundwater or have the potential to impact ground water. Please refer to CLEANUPSITES database as source of current data.

SWEEPS Statewide Environmental Evaluation and Planning System

VERSION DATE: 10/01/94

The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials. Refer to CUPA listing for source of current data.

USTCUPA Underground Storage Tanks

VERSION DATE: 10/18/18

An underground storage tank is an individual tank or group of tanks that store hazardous substances. Underground storage tanks are completely or considerably below the ground surface. This database contains UST permit data submitted from the Certified Unified Program Agencies (CUPA) directly to the State Water Resources Control Board. CUPA's are local agencies that have been certified by the California EPA to implement state environmental programs within the local agency's jurisdiction.

BF Brownfield Sites

VERSION DATE: 09/03/18

This database includes Brownfield sites from the State Water Resources Control Board. These are sites that have gone through the Moratorium of Agreement (MOA) process.

Environmental Records Definitions - STATE (CA)

CALSITES CALSITES Database

VERSION DATE: 05/01/04

This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

CLEANUPSITES GeoTracker Cleanup Sites

VERSION DATE: 10/09/18

This GeoTracker Cleanup Sites database is maintained by the State Water Resources Control Board. The database contains contaminated sites that impact groundwater or have the potential to impact ground water, including sites that require cleanup, such as Leaking Underground Storage Tank Sites, Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including: Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites. GeoTracker portals retrieve records and view integrated data sets from multiple State Water Board programs and other agencies.

CORTESE Cortese List

VERSION DATE: 10/18/18

This active listing includes hazardous waste and substances sites designated by the State Water Resources Control Board , the Integrated Waste Board, and the Department of Toxic Substance Control. The Cortese List is utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites.

DROP Listing of Certified Dropoff, Collection, and Community Service Programs

VERSION DATE: 10/14/18

Listing of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

ERAP Expedited Removal Action Program Sites

VERSION DATE: 10/14/18

The Expedited Remedial Action Program is a pilot project administered by the Department of Toxic Substances Control's Site Mitigation and Brownfields Reuse Program to promote the cleanup of up to 30 hazardous substance release sites. ERAP provides significant incentives for redevelopment of contaminated properties by promoting cleanups based on the planned land use, by providing a covenant not to sue, and by outlining a fair and equitable liability scheme.

HISTCORTESE Historical Cortese List

VERSION DATE: 11/02/02

This historical listing includes hazardous waste and substances sites designated by the State Water Resources Control Board, the Integrated Waste Board, and the Department of Toxic Substance Control. The Cortese List was utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. See CACORTESE for an updated version of this database.

LUST Leaking Underground Storage Tanks

VERSION DATE: 10/09/18

This database is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents. Please refer to the CLEANUPSITES database as source of current data.

NFA No Further Action Determination

VERSION DATE: 09/16/18

The NFA listing contains properties at which the Department of Toxic Substance Control has made a clear determination that the property does not pose a problem to the environment or to public health.

NFE Sites Needing Further Evaluation

VERSION DATE: 06/20/18

The NFE listing contains properties that the Department of Toxic Substance Control suspects with possible contamination. These are unconfirmed contaminated properties that need further assessment.

PROC Listing of Certified Processors

VERSION DATE: 08/12/18

Listing of Certified Processors that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

REF Referred to Another Local or State Agency

VERSION DATE: 06/21/18

The REF listing contains properties where contamination has not been confirmed and which were determined as not requiring direct Department of Toxic Substance Control Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Environmental Records Definitions - STATE (CA)

SWIS Solid Waste Information System Sites

VERSION DATE: 10/08/18

The Solid Waste Information System (SWIS) database includes information on solid waste facilities, operations, and disposal sites located in California. This database is maintained by the California Department of Resources Recycling and Recovery.

SWRCY Recycling Centers

VERSION DATE: 08/13/18

Listing of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

VCP Voluntary Cleanup Program

VERSION DATE: 10/14/18

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

WMUDS Waste Management Unit Database

VERSION DATE: 01/01/00

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

ENVIROSTOR EnviroStor Cleanup Sites

VERSION DATE: 10/14/18

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where DTSC has made a "No Action Required" determination are not included in this database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

Environmental Records Definitions - STATE (CA)

ENVIROSTORPCA EnviroStor Permitted and Corrective Action Sites

VERSION DATE: 10/18/18

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database contains detailed information on hazardous waste permitted and corrective action facilities. Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective action." These facilities treated stored, disposed and/or transferred hazardous waste.

TOXPITS Toxic Pits Cleanup Act Sites

VERSION DATE: 07/01/95

Toxic Pits are sites with possible contamination of hazardous substances where cleanup is necessary. This listing is no longer updated by the State Water Resources Control Board.

USTR09 Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/10/18

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

LUSTR09 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/10/18

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

TORRESDUMPSITES Illegal Dump Sites on the Torres Martinez Reservation

VERSION DATE: 10/29/07

This listing of illegal dump site locations on the Torres Martinez Reservation is maintained by the United States Environmental Protection Agency, Region IX. These dump sites contain unlawfully discarded household waste such as landscaping and wood wastes with no known soil or groundwater contamination. A majority of the sites have already been cleaned up through the collaborative efforts of the EPA, The California Integrated Waste Management Board and the Torres Martinez Tribe.

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

APPENDIX B

Historical Aerial Photographs, Topographic Maps, Fire Insurance Map, City Directories, and FEMA Flood Maps

Historical Aerial Photographs

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269581
Project #: D180359
Date: 12/7/2018

Target Property Summary

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

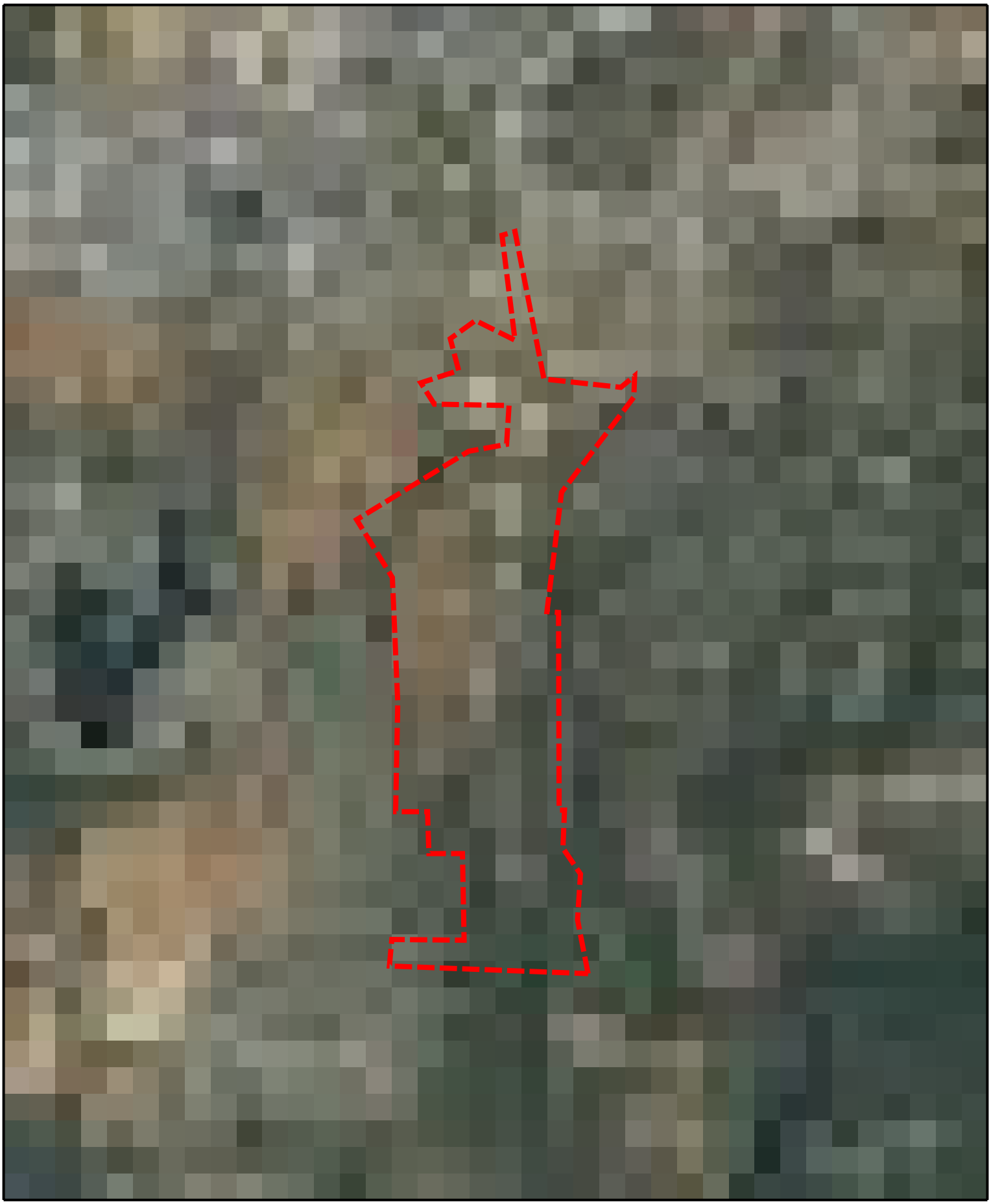
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Target Property Geometry: ***Area***

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Aerial Research Summary

Date	Source	Scale	Frame
2016	USDA	1" = 1000'	N/A
2014	USDA	1" = 1000'	N/A
2012	USDA	1" = 1000'	N/A
2010	USDA	1" = 1000'	N/A
2009	USDA	1" = 1000'	N/A
2006	USDA	1" = 1000'	N/A
2005	USDA	1" = 1000'	N/A
2004	USDA	1" = 1000'	N/A
05/09/1993	USGS	1" = 1000'	N/A
09/07/1984	NASA	1" = 1000'	3405-9638
06/26/1980	USGS	1" = 1000'	1-30
08/29/1975	USGS	1" = 1000'	1-150
07/31/1964	CAS	1" = 1000'	2-44
09/02/1952	ASCS	1" = 1000'	1-130
11/03/1946	USGS	1" = 1000'	3-34

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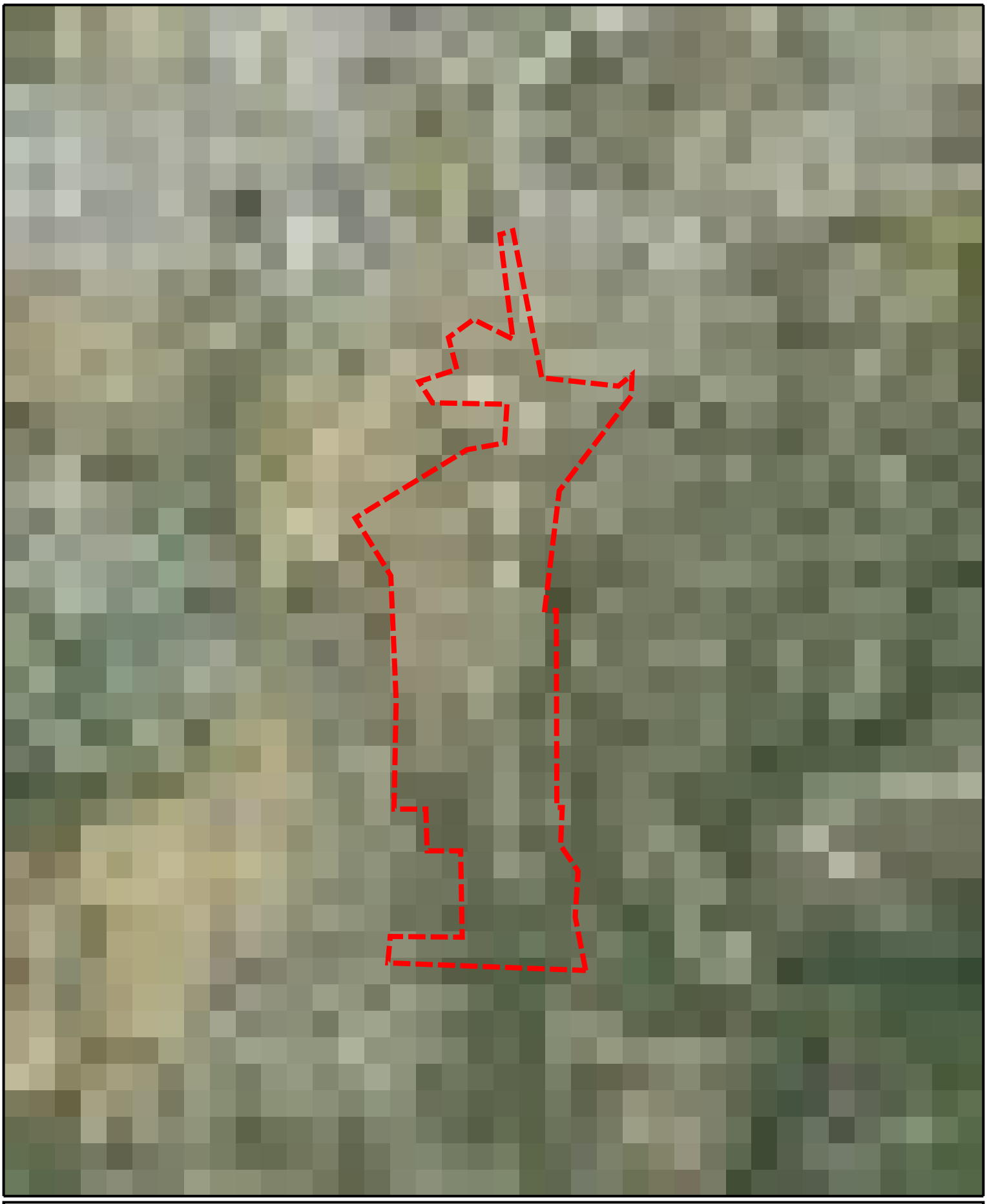


N
W E
S

Stonehenge Springs
USDA
2016

GeoSearch

JOB #: 269581 - 12/07/2018

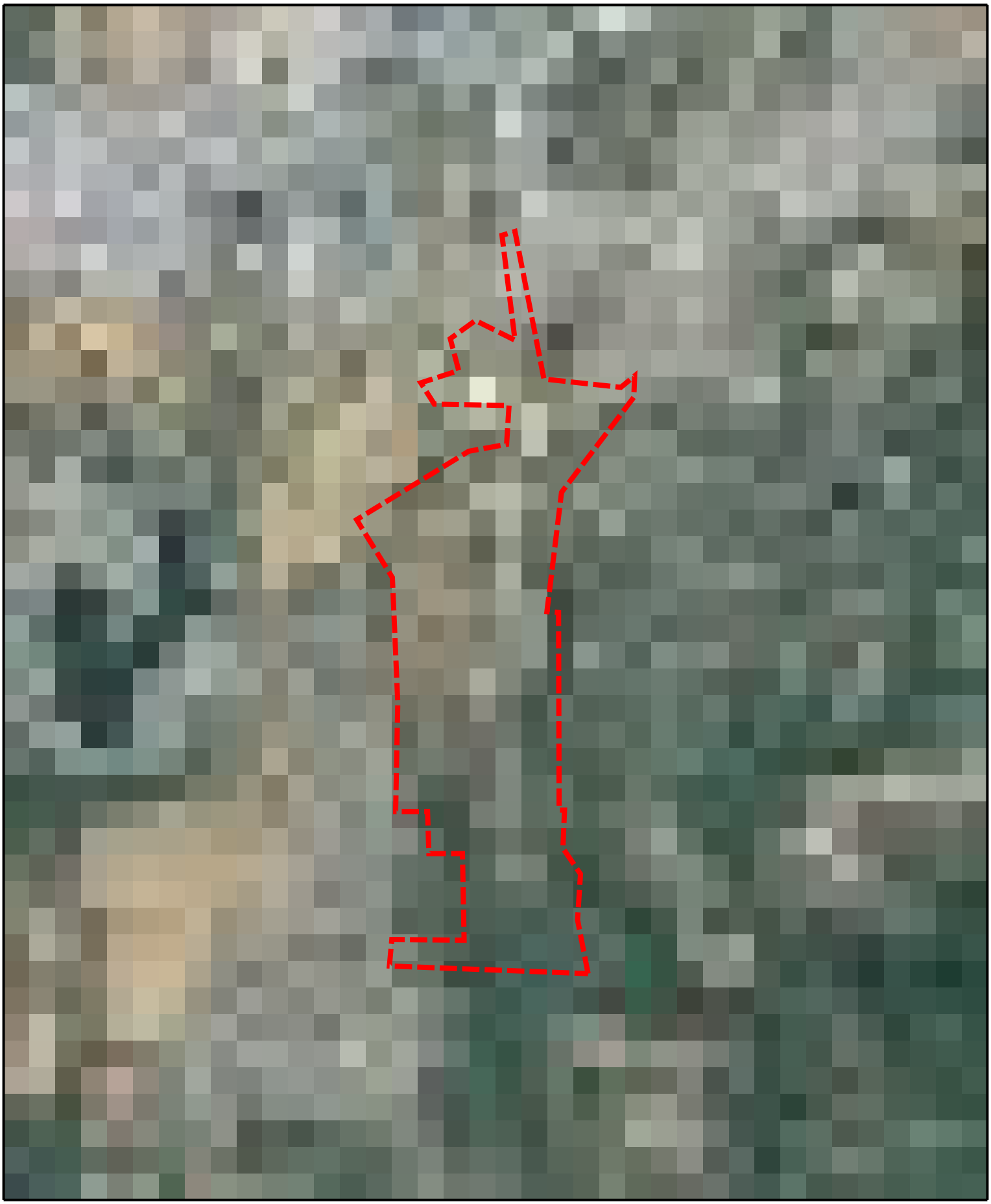


N
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Stonehenge Springs
USDA
2014

GeoSearch

JOB #: 269581 - 12/07/2018

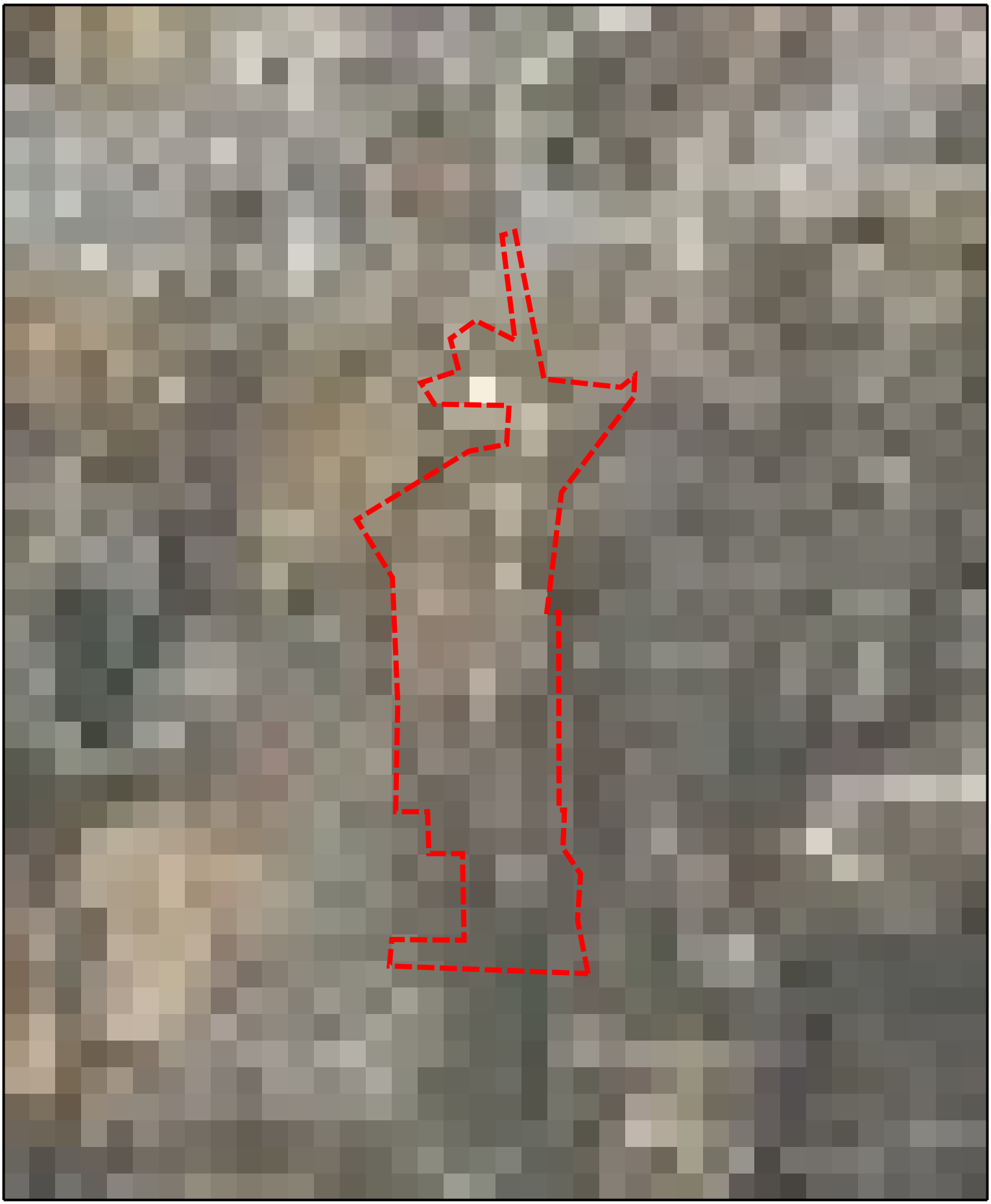


N
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Stonehenge Springs
USDA
2012

GeoSearch

JOB #: 269581 - 12/07/2018

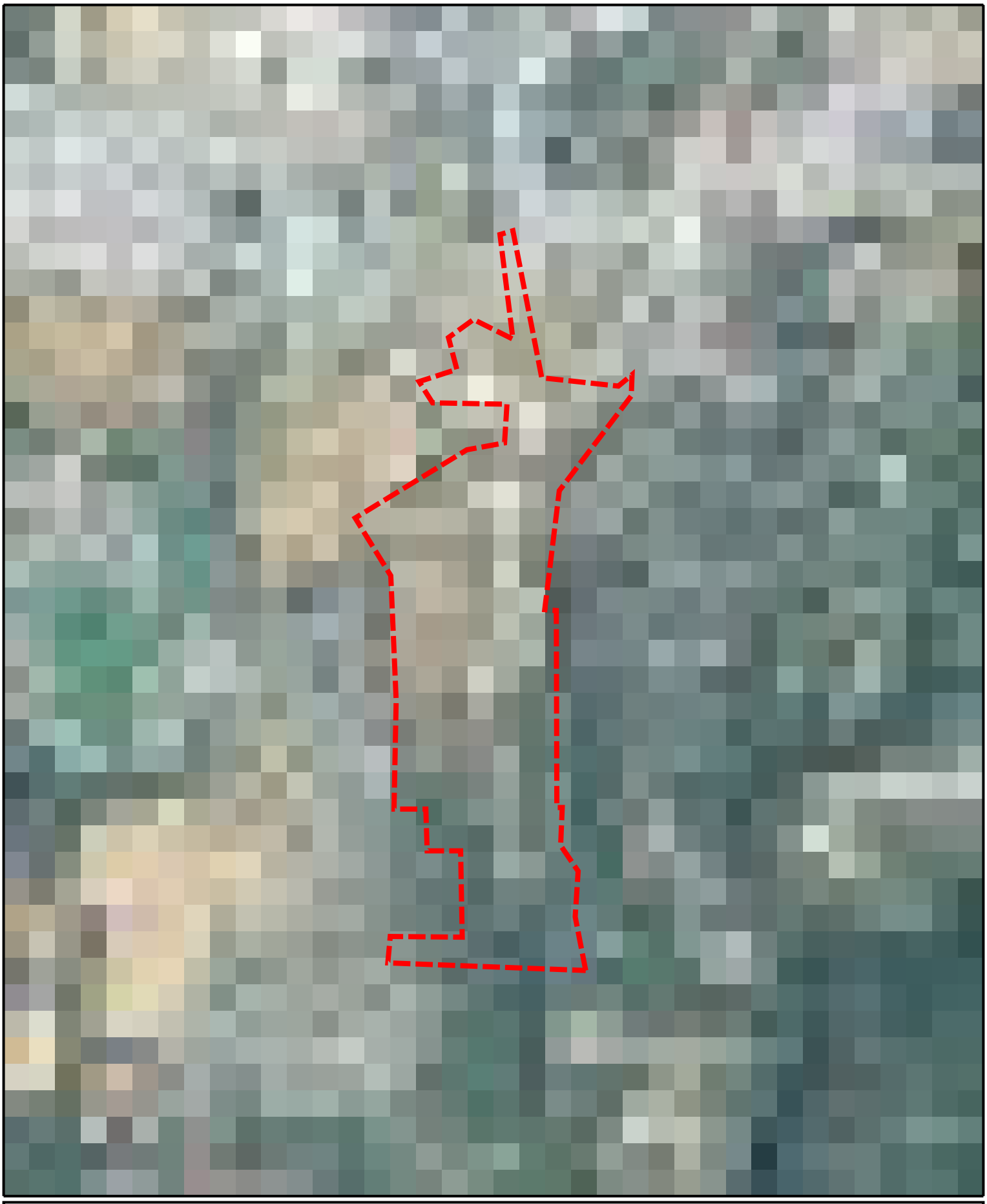


N
W E
S

Stonehenge Springs
USDA
2010

GeoSearch

JOB #: 269581 - 12/07/2018

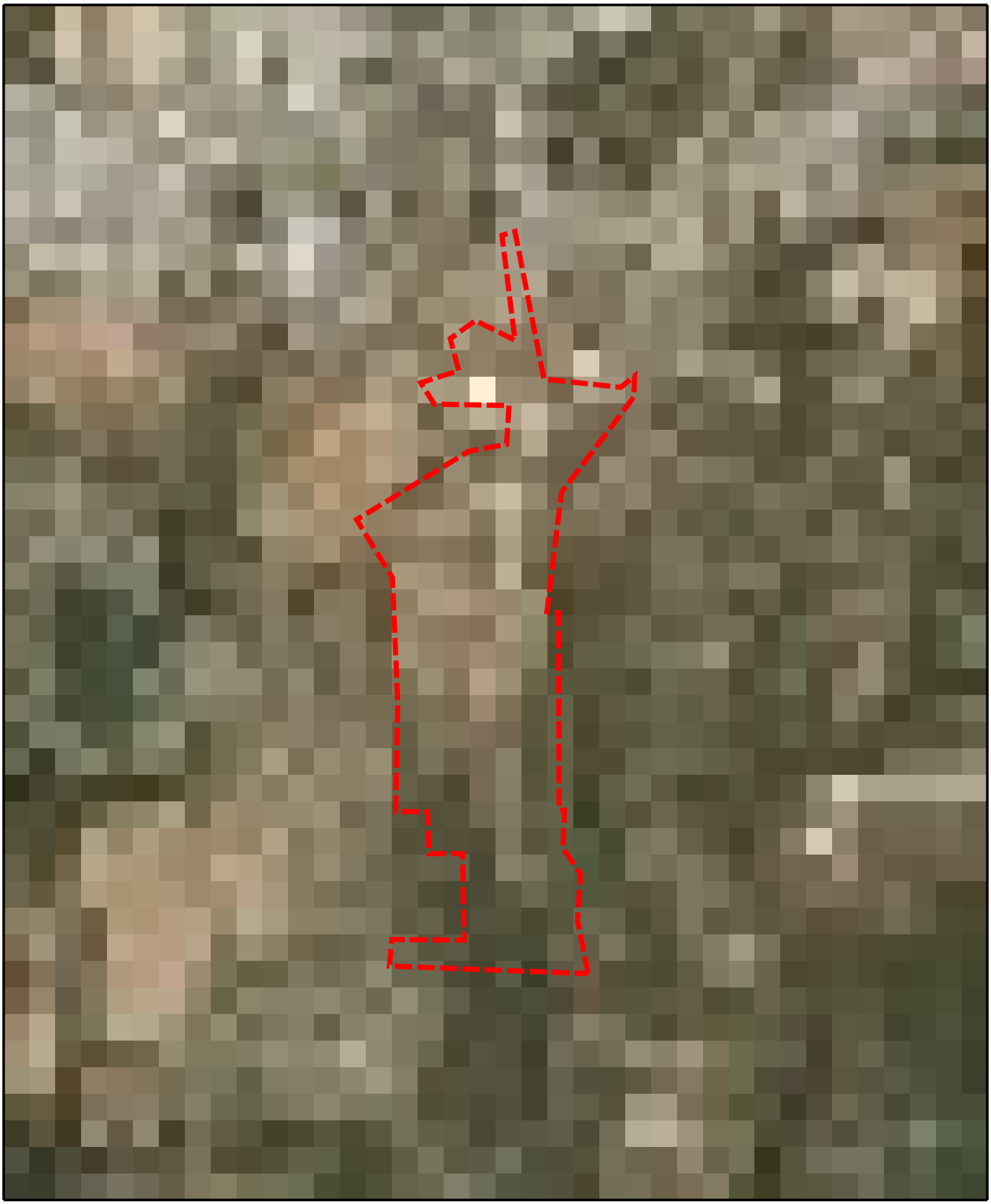


N
W E
S

Stonehenge Springs
USDA
2009

GeoSearch

JOB #: 269581 - 12/07/2018

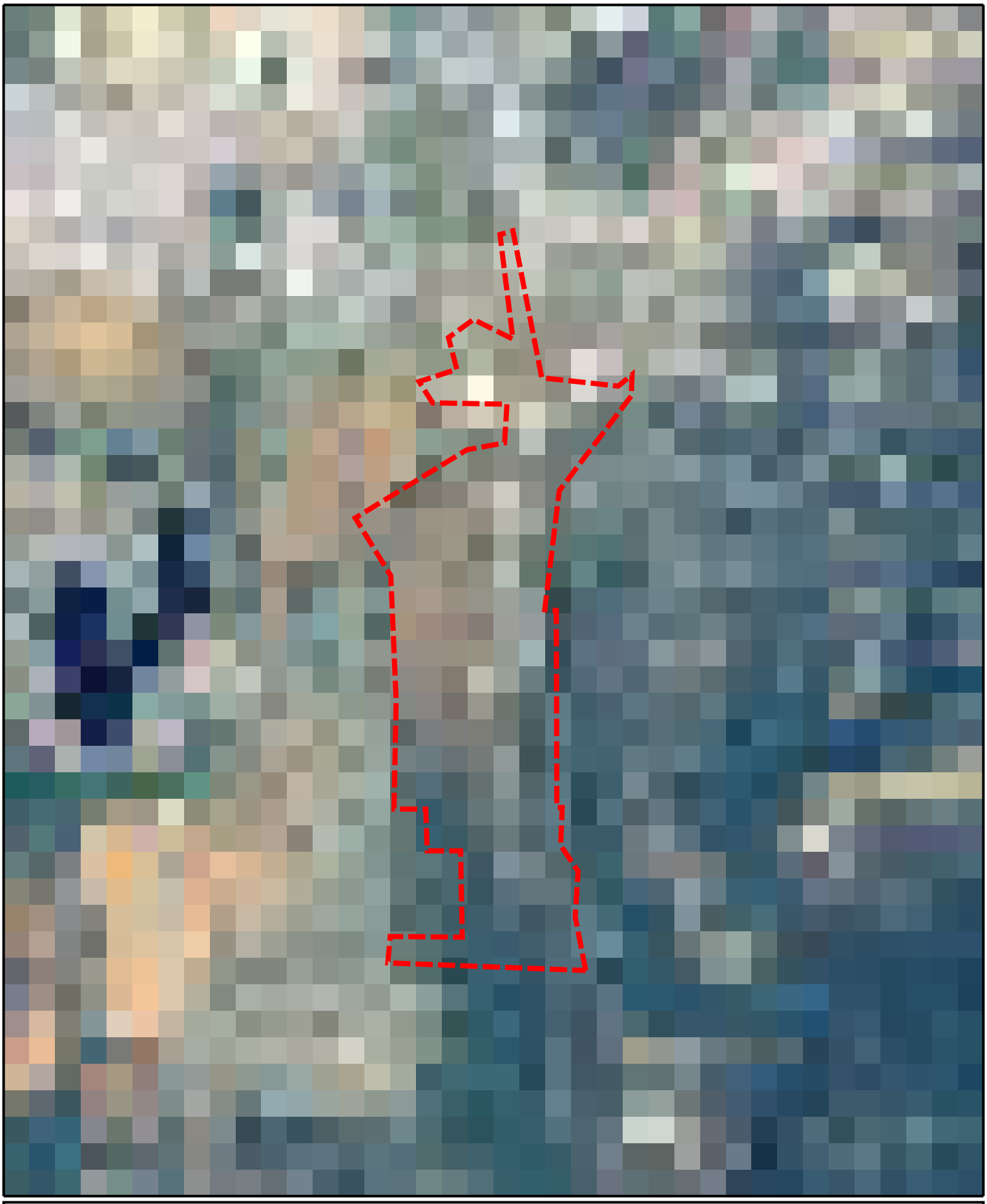


N
W E
S

Stonehenge Springs
USDA
2006

GeoSearch

JOB #: 269581 - 12/07/2018

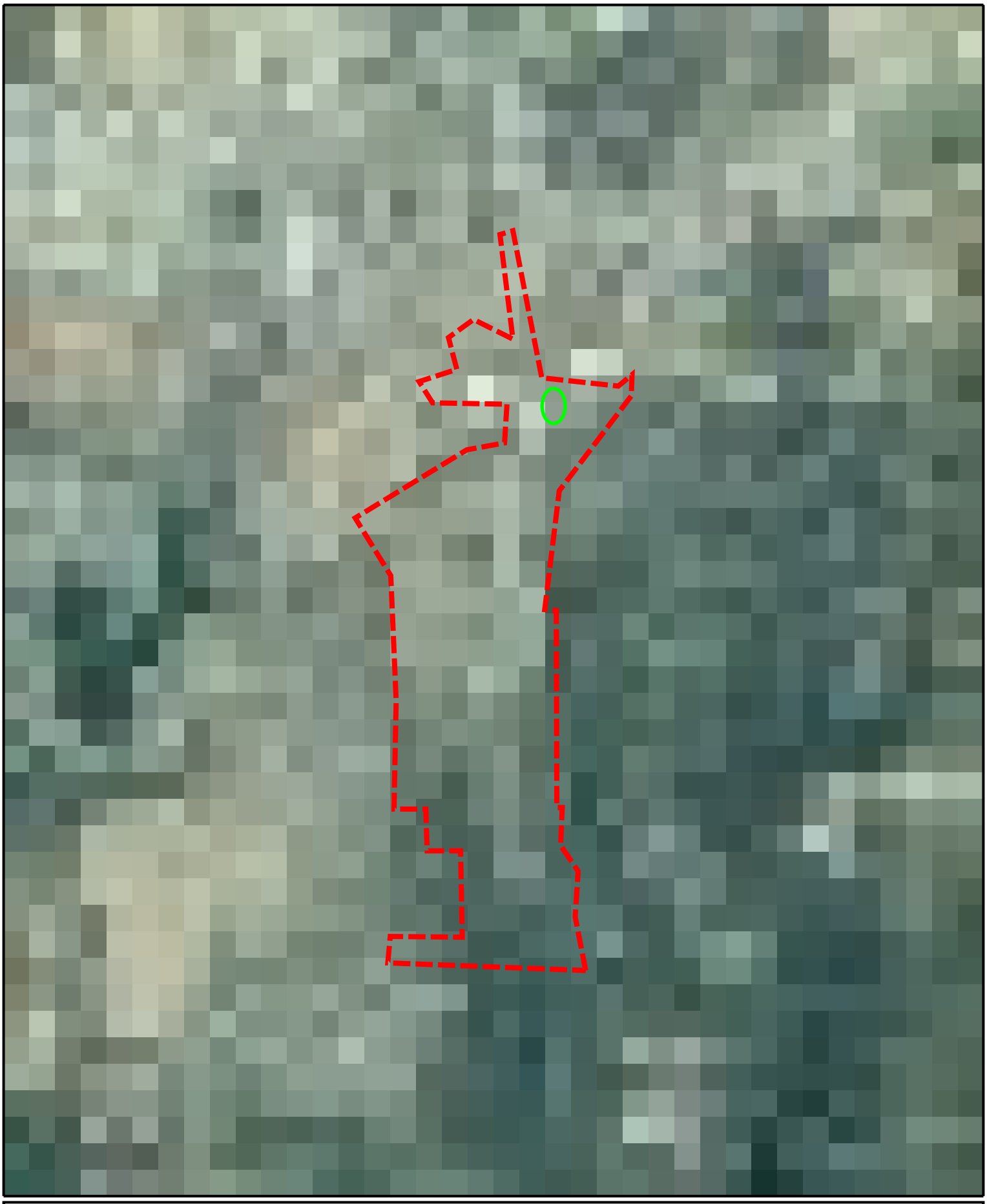


N
W E
S

Stonehenge Springs
USDA
2005

GeoSearch

JOB #: 269581 - 12/07/2018

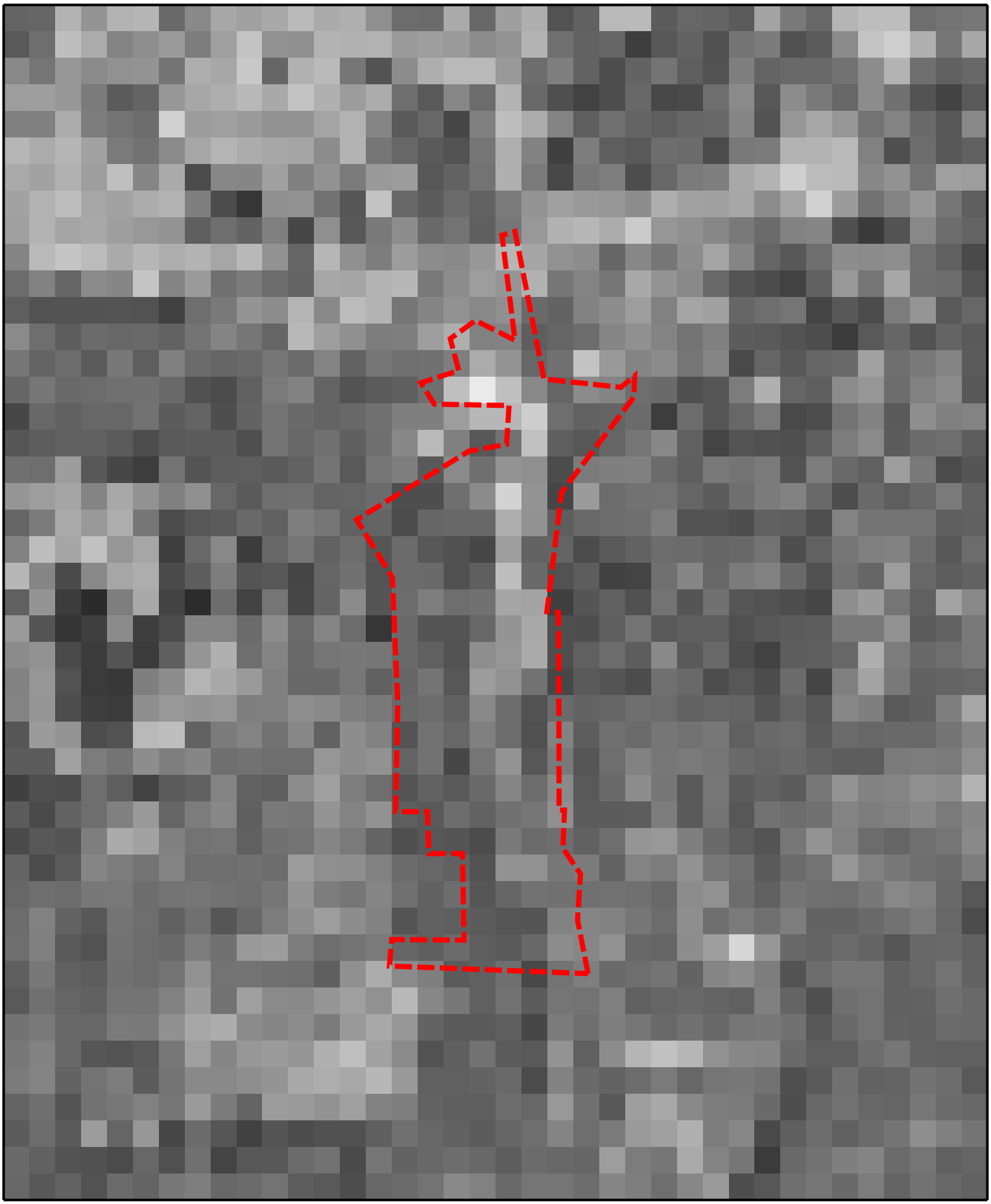


N
W E
S

Stonehenge Springs
USDA
2004

GeoSearch

JOB #: 269581 - 12/07/2018

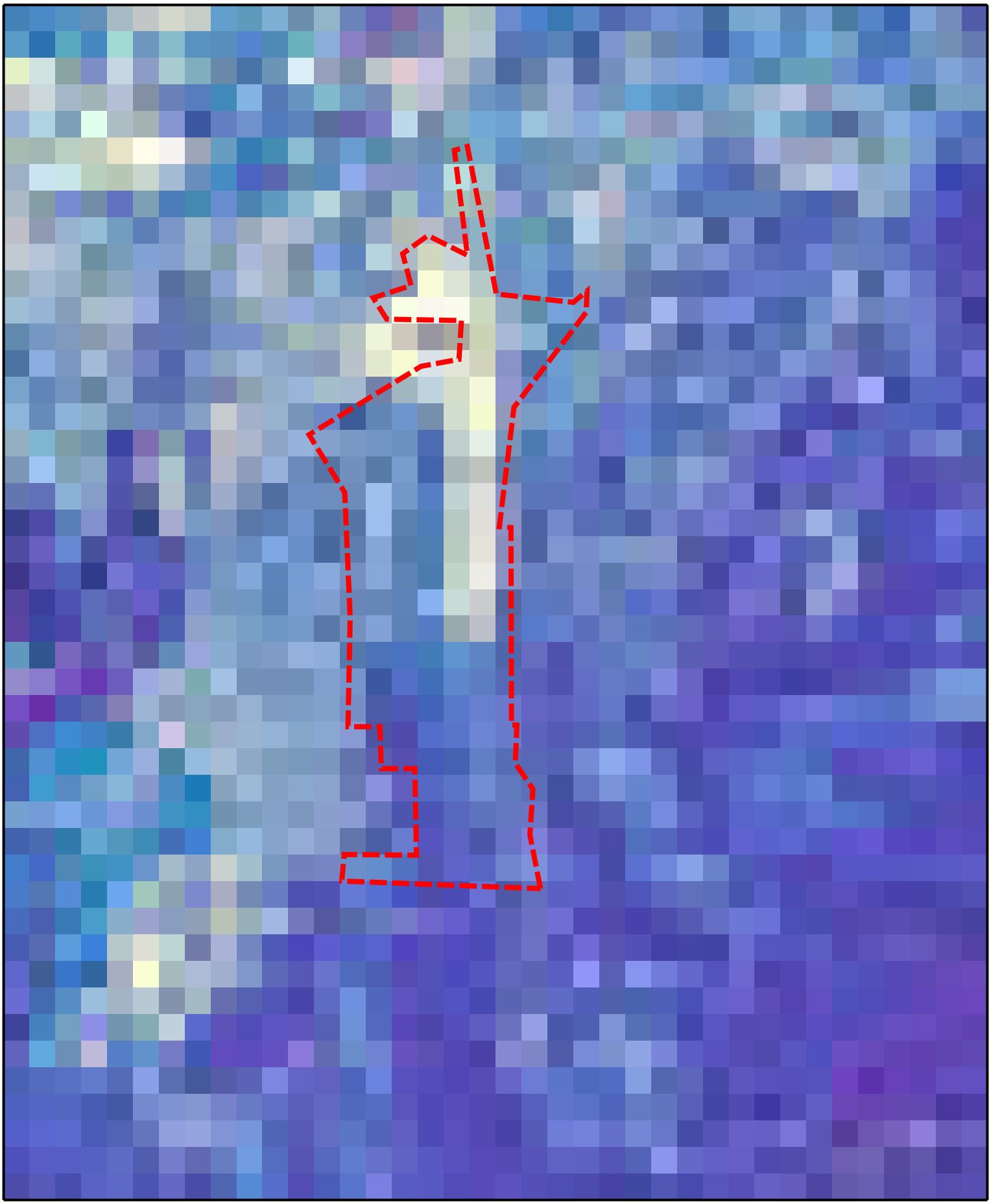


N
W E
S

Stonehenge Springs
USGS
05/09/1993

GeoSearch

JOB #: 269581 - 12/07/2018

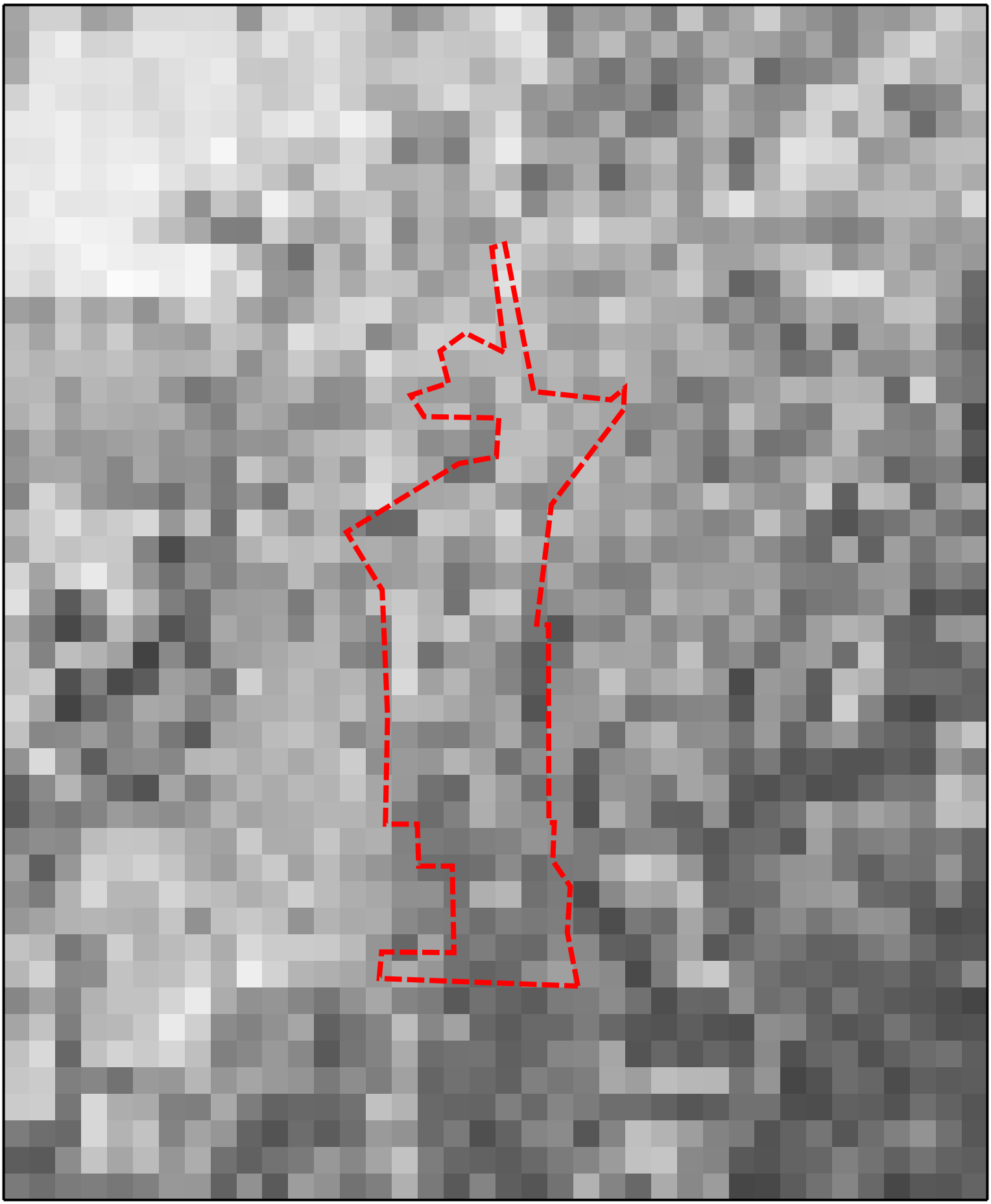


N
W E
S

Stonehenge Springs
NASA
09/07/1984

GeoSearch

JOB #: 269581 - 12/07/2018

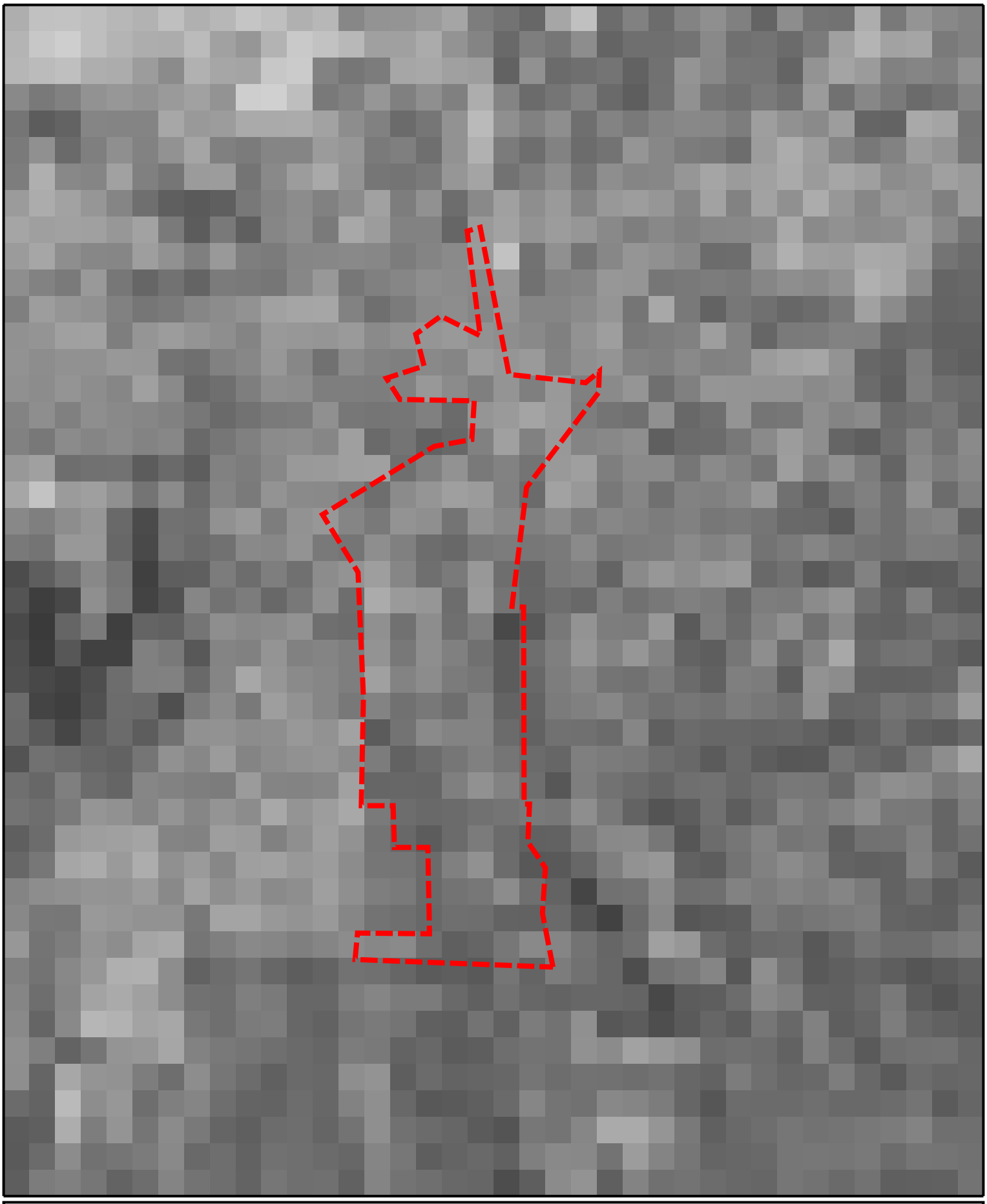


N
W E
S

Stonehenge Springs
USGS
06/26/1980

GeoSearch

JOB #: 269581 - 12/07/2018

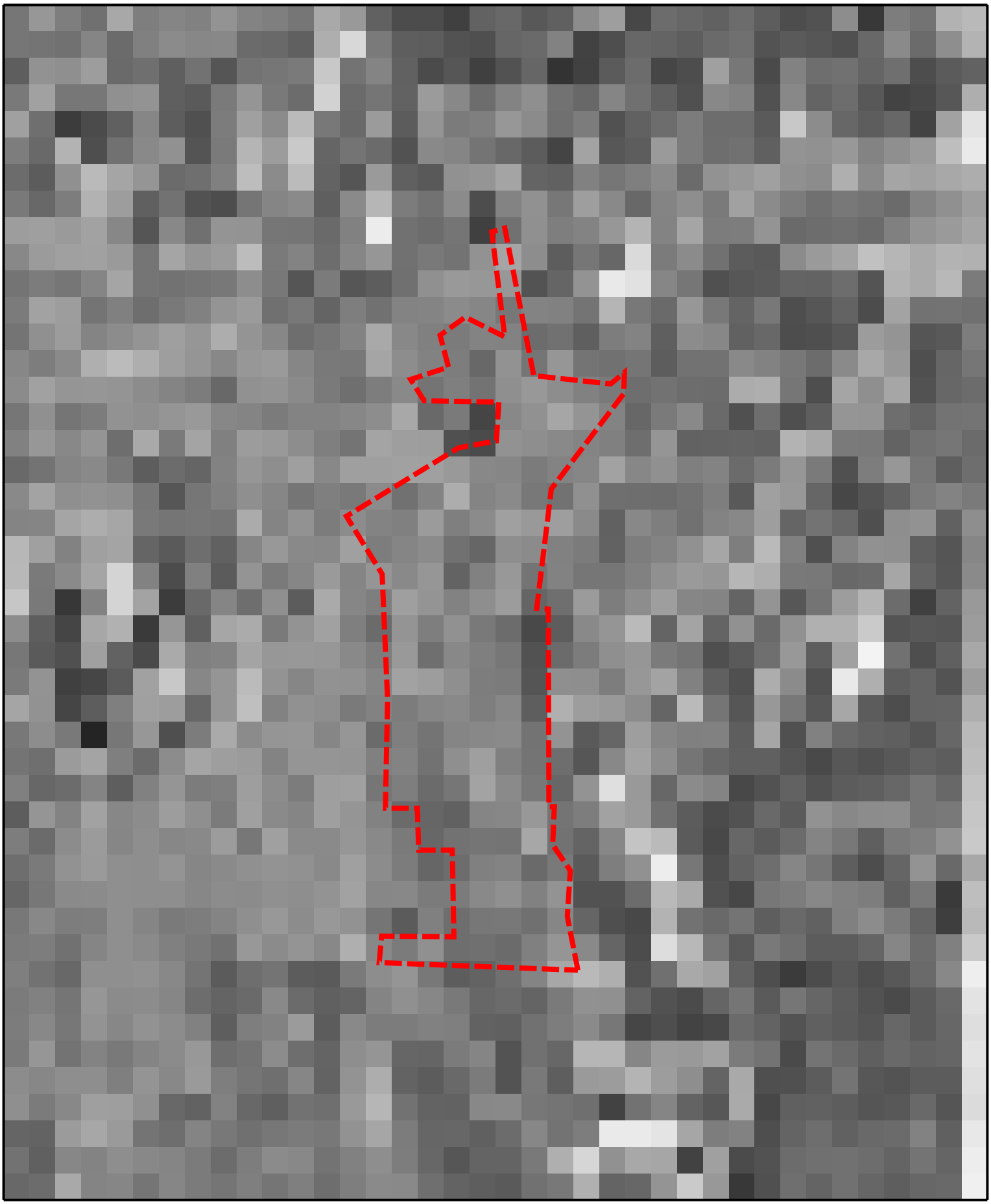


N
W E
S

Stonehenge Springs
USGS
08/29/1975

GeoSearch

JOB #: 269581 - 12/07/2018

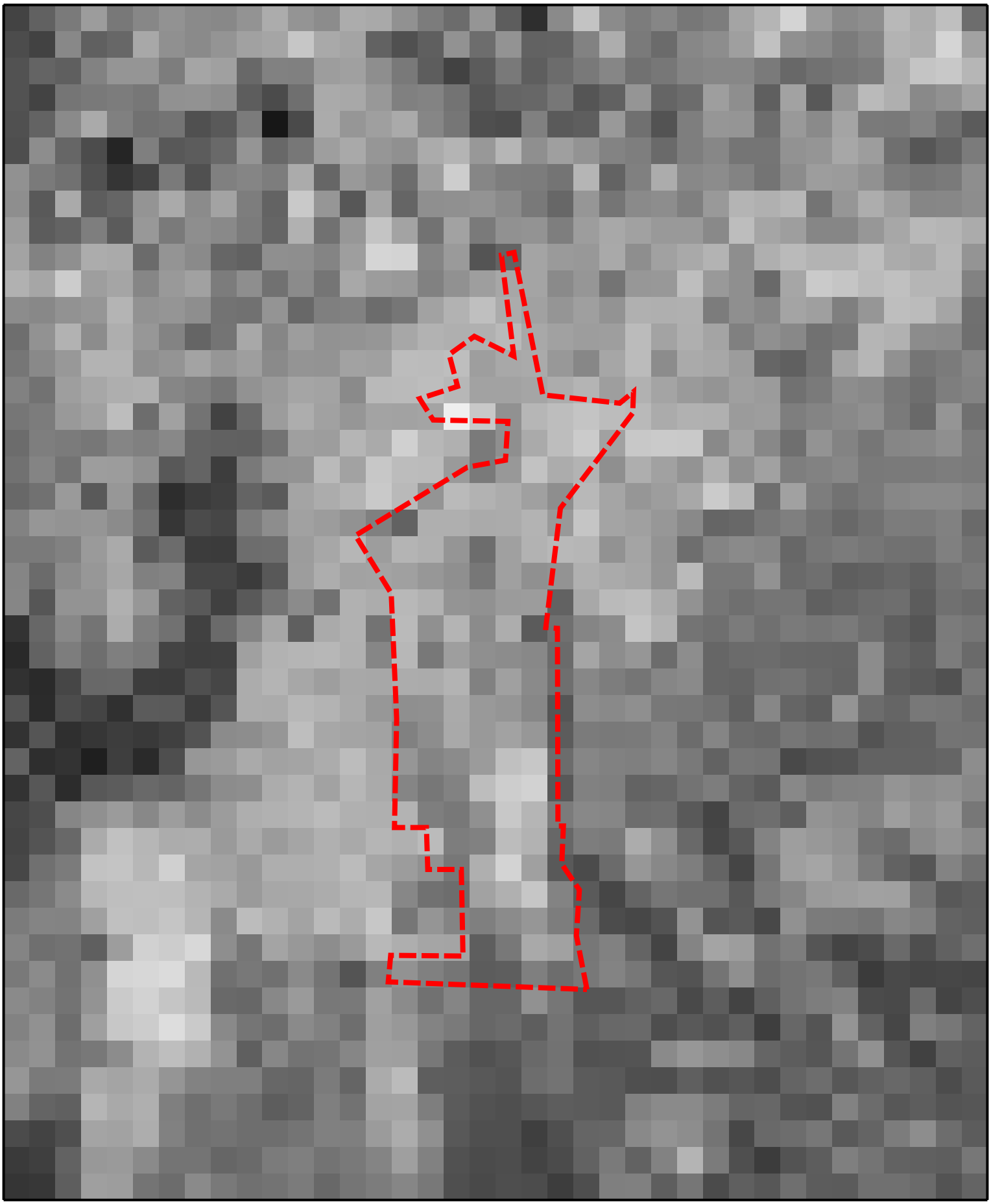


N
W E
S

Stonehenge Springs
CAS
07/31/1964

GeoSearch

JOB #: 269581 - 12/07/2018

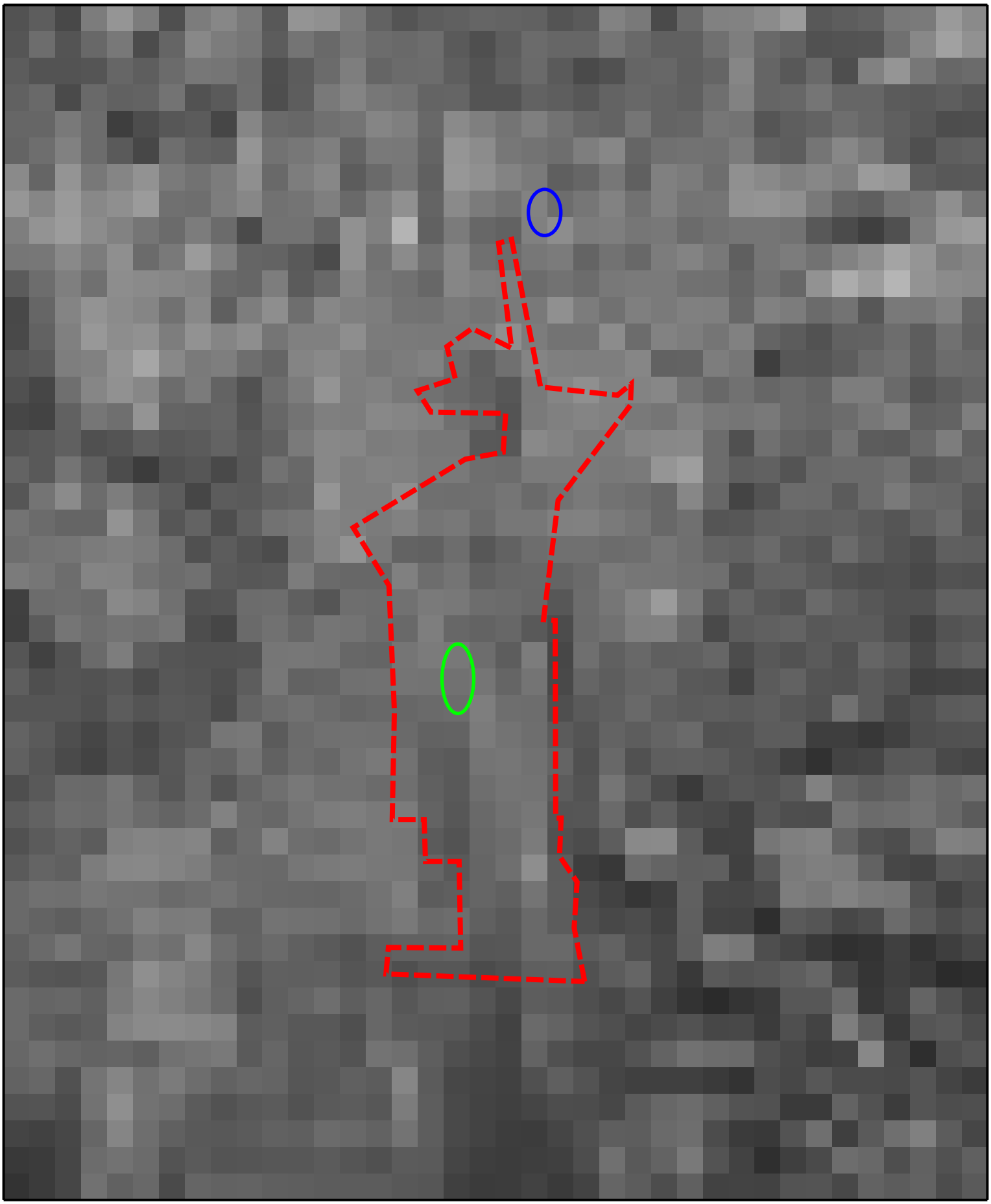


N
W E
S

Stonehenge Springs
ASCS
09/02/1952

GeoSearch

JOB #: 269581 - 12/07/2018



N
W E
S

Stonehenge Springs
USGS
11/03/1946

GeoSearch

JOB #: 269581 - 12/07/2018

Historical Topographic Maps

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269580
Project #: D180359
Date: 12/7/2018

Target Property Summary

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

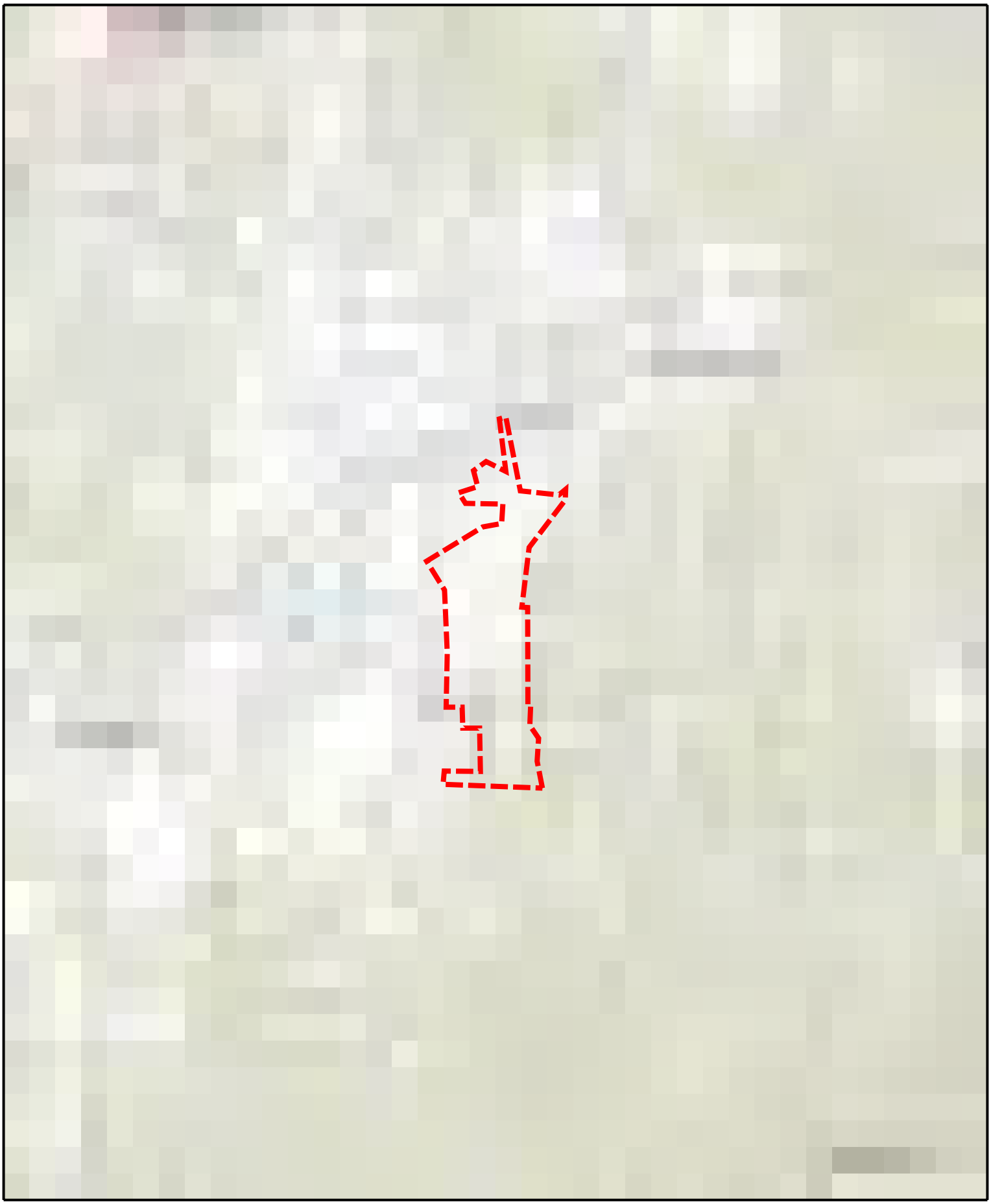
USGS Quadrangle: ***Placerville***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-120.816350834, 38.677359136), (-120.821951287, 38.677526651), (-120.821886914, 38.678112951), (-120.819848435, 38.678096199), (-120.819891350, 38.680005827), (-120.820835488, 38.680005827), (-120.820878403, 38.680927121), (-120.821779625, 38.680927121), (-120.821715252, 38.683322429), (-120.821865456, 38.686086146), (-120.822873967, 38.687359095), (-120.819719689, 38.688866505), (-120.818646805, 38.689017244), (-120.818582432, 38.689871428), (-120.820685284, 38.689904925), (-120.821071522, 38.690373884), (-120.819998639, 38.690641859), (-120.820234673, 38.691345288), (-120.819526570, 38.691747245), (-120.818410771, 38.691311792), (-120.818775551, 38.693623014), (-120.818410771, 38.693706752), (-120.817595379, 38.690457626), (-120.815428154, 38.690273393), (-120.815041916, 38.690524620), (-120.815063374, 38.690055662), (-120.817101853, 38.687962063), (-120.817509549, 38.685332415), (-120.817187684, 38.685315666), (-120.817166226, 38.680960622), (-120.817016022, 38.680960622), (-120.817058938, 38.680123084), (-120.816565411, 38.679553552), (-120.816651242, 38.678548484)

Topographic Map Summary

Date	Quadrangle	Scale
2012	Placerville, CA	1" = 2000'
1949 PHOTOREVISED 1973	Placerville, CA	1" = 2000'
1950	Placerville, CA	1" = 2000'
1949	Placerville, CA	1" = 2000'
1893	Placerville, CA	1" = 10420'
1892	Placerville, CA	1" = 10420'
1891	Placerville, CA	1" = 10420'

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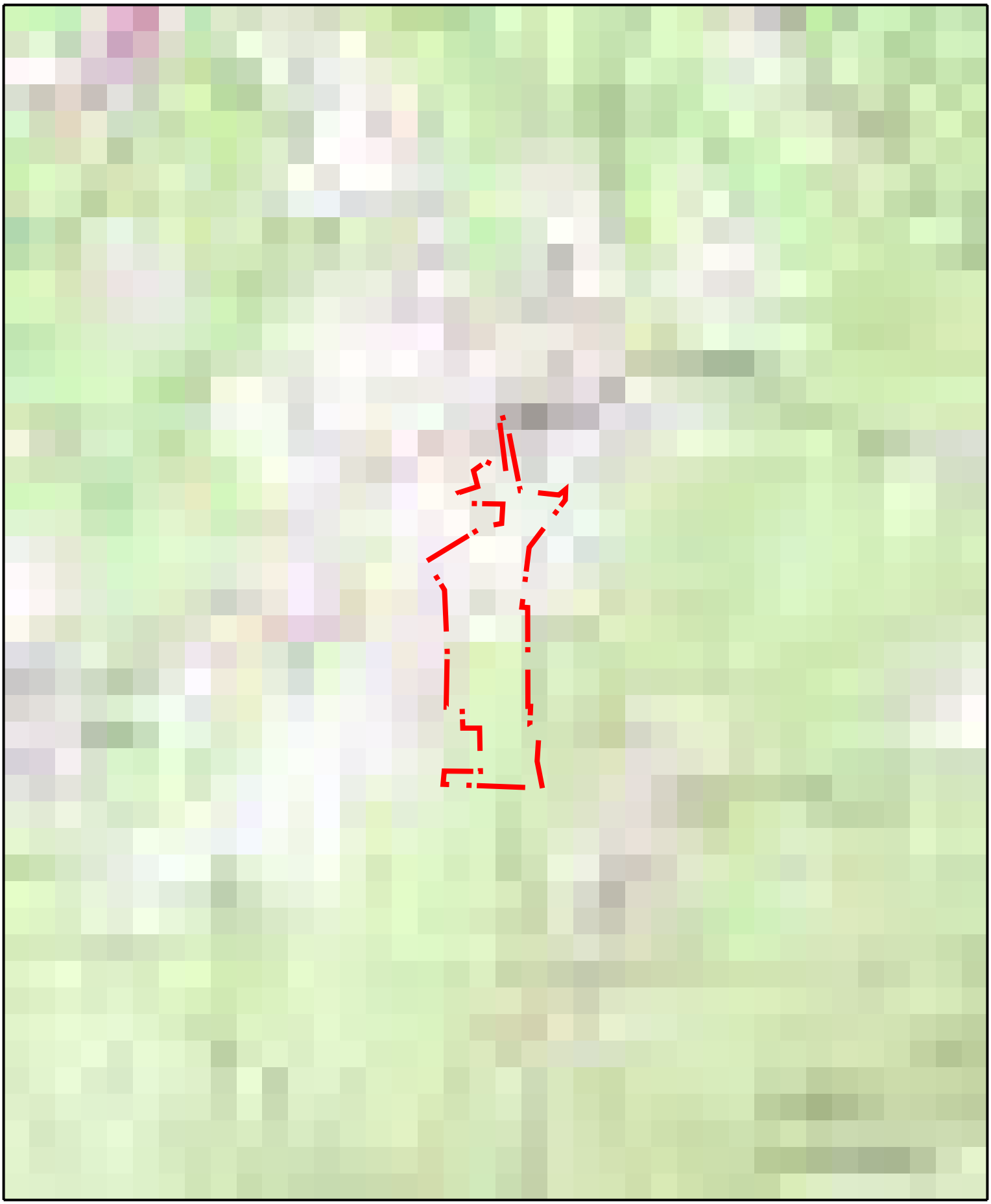


N
W E
S

Stonehenge Springs
Placerville, CA (2012)

GeoSearch

JOB #: 269580 - 12/07/2018

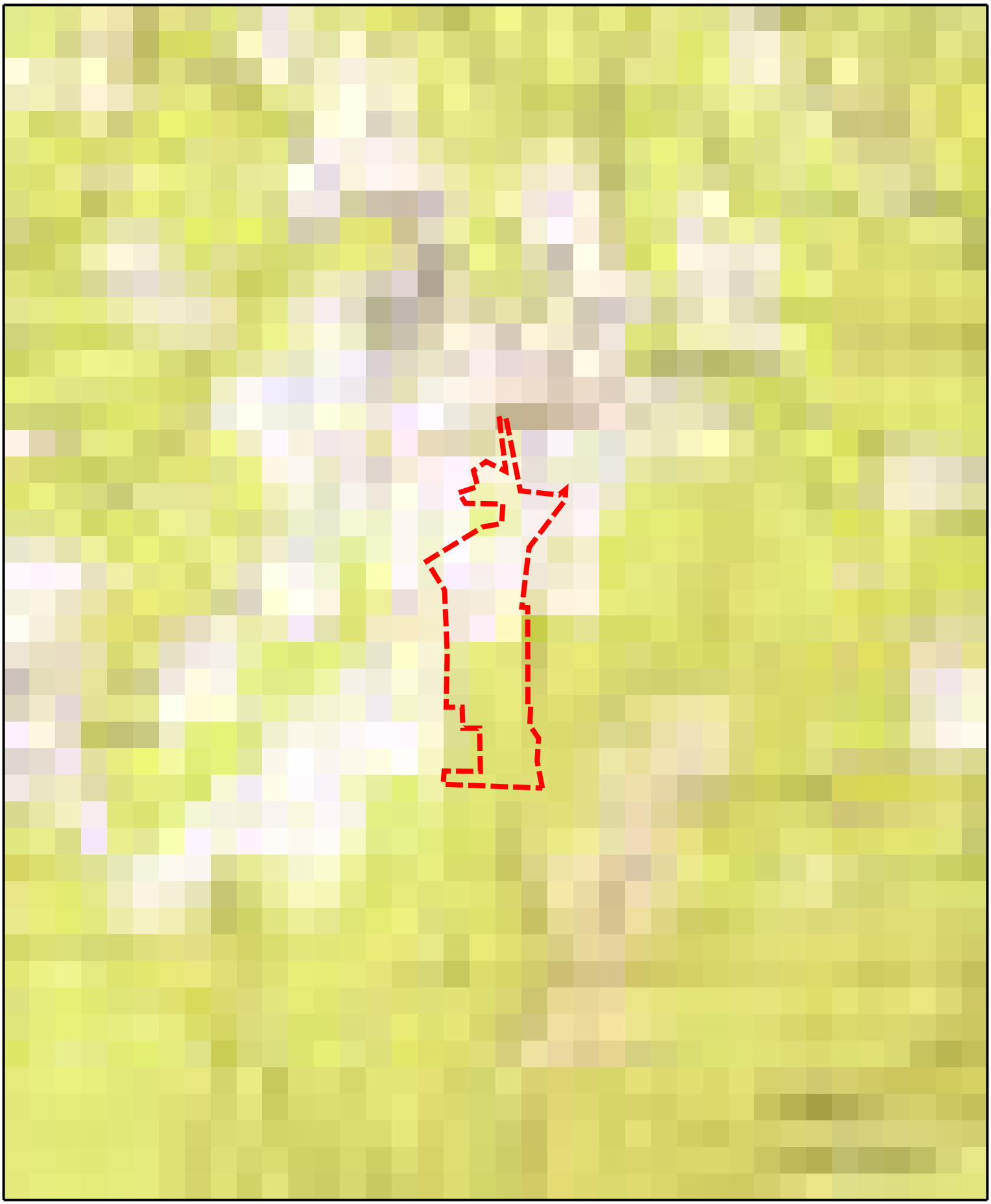


N
W E
S

Stonehenge Springs
Placerville, CA (1973)

GeoSearch

JOB #: 269580 - 12/07/2018

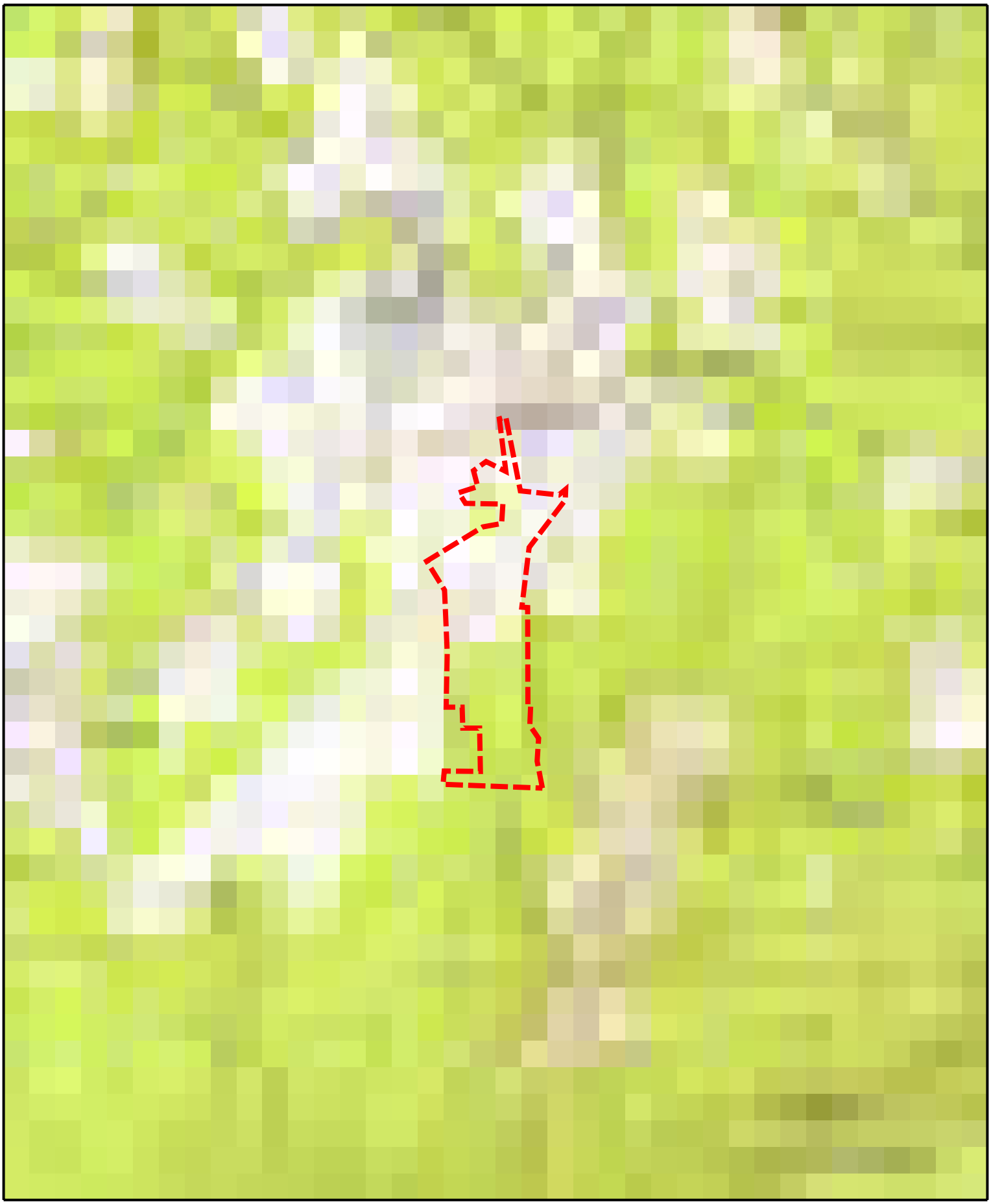


N
W E
S

Stonehenge Springs
Placerville, CA (1950)

GeoSearch

JOB #: 269580 - 12/07/2018

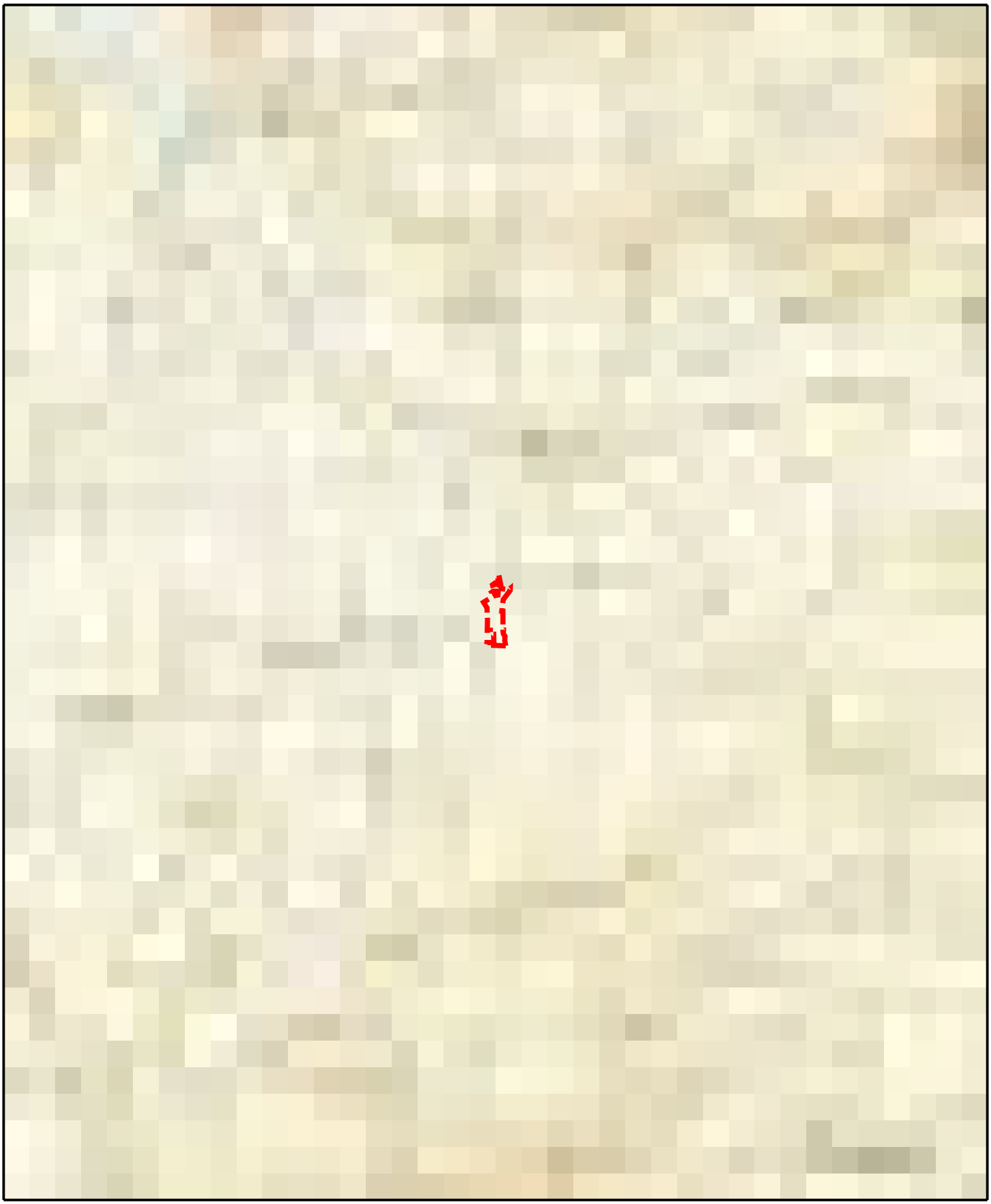


N
W E
S

Stonehenge Springs
Placerville, CA (1949)

GeoSearch

JOB #: 269580 - 12/07/2018



N
W E
S

Stonehenge Springs
Placerville, CA (1893)

GeoSearch

JOB #: 269580 - 12/07/2018

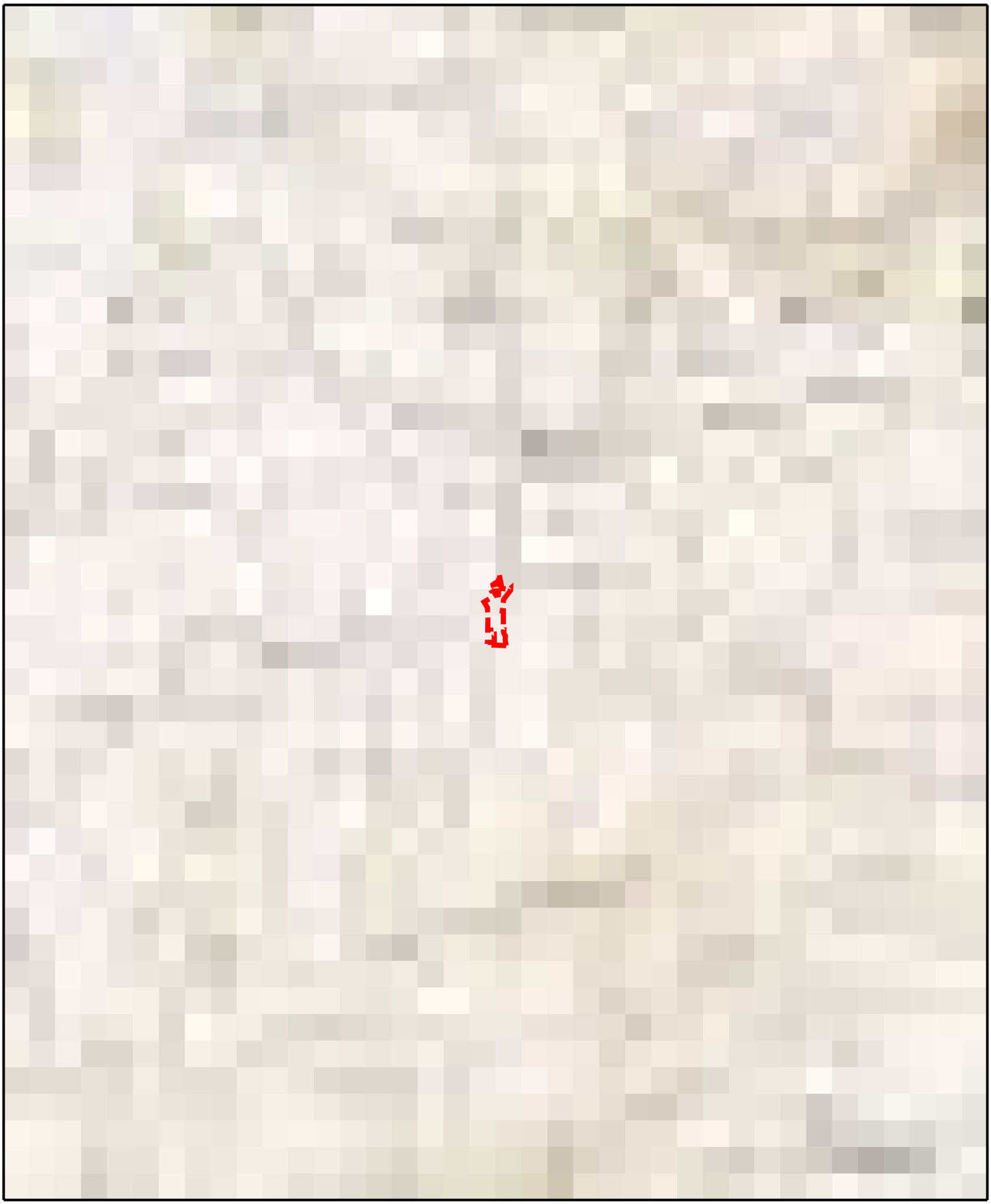


N
W E
S

Stonehenge Springs
Placerville, CA (1892)

GeoSearch

JOB #: 269580 - 12/07/2018



N
W E
S

Stonehenge Springs
Placerville, CA (1891)

GeoSearch

JOB #: 269580 - 12/07/2018



Target Property:

Stonehenge Springs

Faith Lane,
Diamond Springs, CA 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269584
Project #: D180359
Date #: 12/07/18

GeoSearch FIM

Date: 12/07/18

GS Job Number: 118699

Company Name: Environmental Science Assoc-San Francisco

Project Number: D180359

Site Information: Stonehenge Springs
Faith Lane,
Diamond Springs, CA 95619

The collections of fire insurance maps listed below were reviewed according to the site information supplied by client. Based on the information provided, no coverage is available.

Library of Congress
University Publications of America
Other Libraries (universities, state, local, etc.).

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City Directory Target Property Address

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Target Property Address

Faith Ln, Diamond Springs, CA 95619

1 FAITH LN

2016	STREET NOT LISTED	INFOUSA	SOUTH WEST
2011	STREET NOT LISTED	INFOUSA	PACIFIC
2006	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

Comment:

Historical By Street Number

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Historical by Street Number

1 Faith Ln	No Listing (2002/03-2016)

Comments:

City Directory Standard Report

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

INFOUSA

SOUTH WEST	2016	**FAITH LN**	
		1	STREET NOT LISTED

INFOUSA

PACIFIC	2011	**FAITH LN**	
		1	STREET NOT LISTED

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB)	2006	**FAITH LN**	
		1	STREET NOT LISTED

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB)	2002-03	**FAITH LN**	
		1	STREET NOT LISTED

Comment:

City Directory Target Property Address

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Target Property Address

Pleasant Valley Rd, Diamond Springs, CA 95828

1 PLEASANT VALLEY RD

2016	STREET BEGINS	INFOUSA	SOUTH WEST
2011	STREET BEGINS	INFOUSA	PACIFIC
2002-03	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1980	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1970	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

98 PLEASANT VALLEY RD

1985	HARSHFIELD COLLIN F	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

118 PLEASANT VALLEY RD

1985	HEDGECOCK C	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

130 PLEASANT VALLEY RD

2016	TOWER MART	INFOUSA	SOUTH WEST
2011	CAB SERVICES	INFOUSA	PACIFIC
2011	TOWER MART	INFOUSA	PACIFIC
2002-03	TOWER MART	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TOWER MART	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

1995-96	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	FOOD&LIQUOR	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
202 PLEASANT VALLEY RD			
2011	ASCHE BONNIE	INFOUSA	PACIFIC
1990	CARSTEN D	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
273 PLEASANT VALLEY RD			
2016	CREATIVE PHOTO FRAMES	INFOUSA	SOUTH WEST
2011	CREATIVE PHOTO FRAMES	INFOUSA	PACIFIC
2006	CREATIVE PHOTO FRAMES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	HARRINGTON PATRICIA	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	CRAETIVE PHOTO FRAMES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HARRINGTON P	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	CREATIVE PHOTO FRME	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
300 PLEASANT VALLEY RD			
1990	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
320 PLEASANT VALLEY RD			
2002-03	PARISEK JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
321 PLEASANT VALLEY RD			
2016	DAWSON OIL CO	INFOUSA	SOUTH WEST
2011	DAWSON OIL CO	INFOUSA	PACIFIC

2006	DAWSON OIL CO	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	DAWSON OIL CO	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	APARTMENTS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	X [COMMERCE WAY INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

350 PLEASANT VALLEY RD

2016	WESTWOOD MOBILE HOME COMMUNITY	INFOUSA	SOUTH WEST
2011	WESTWOOD MOBILE HOME COMMUNITY	INFOUSA	PACIFIC
2006	MULTI TENANT RESIDENTIAL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	WESTWOOD MOBILE HOME COMMUNITY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [WRANGLER RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	Y [COMMERCE WAY INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1980	WERSTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

1977	MULTI TENANT RESIDENTIAL	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WERSTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WESTWD MBL HM CMNTY	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

373 PLEASANT VALLEY RD

2016	D & D SUPPLY	INFOUSA	SOUTH WEST
2011	D & D SUPPLY	INFOUSA	PACIFIC
2006	D & D PLUMBNG	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	D&B PLUMBING SUPPLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	D & D SUPPLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	X [MISSOURI FLAT RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1990	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

385 PLEASANT VALLEY RD

2016	INDEPENDENCE HIGH SCHOOL	INFOUSA	SOUTH WEST
2016	INDEPENDENCE LEARNING CTR	INFOUSA	SOUTH WEST
2011	INDEPENDENCE HIGH SCHOOL	INFOUSA	PACIFIC
2011	INDEPENDENCE LEARNING CENTER	INFOUSA	PACIFIC
2006	ELDRDO ADULT SCHOOL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [MIISOURI FLAT RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

424 PLEASANT VALLEY RD

2011	TIRAPELLE L	INFOUSA	PACIFIC
2006	TIRAPELLI L	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2002-03	TIRAPELLE L	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	TIRAPELLI L	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	TIRAPELLE L	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
435 PLEASANT VALLEY RD			
2016	MOUER LABS	INFOUSA	SOUTH WEST
2011	SUNRISE FAMILY MEDICINE	INFOUSA	PACIFIC
2006	BACK ON TRACK COUNSELING SERV	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MCCUNE CAROLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MCCUNE CAROLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	YUBACOIN INC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
443 PLEASANT VALLEY RD			
2002-03	LASHER WM	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	LASHER WM	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
444 PLEASANT VALLEY RD			
2002-03	PARKER JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
460 PLEASANT VALLEY RD			
2016	DEB'S FROSTY	INFOUSA	SOUTH WEST
2006	DEB'S FROSTY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [CHINA GARDEN INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2002-03	DEB'S FROSTY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	SMITH ELAIDA	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
461 PLEASANT VALLEY RD			
2006	TAYLOR THOMAS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TAYLOR THOMAS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
466 PLEASANT VALLEY RD			
1980	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WEINAND KENT MRS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
470 PLEASANT VALLEY RD			
2002-03	BONANZA CARPET CLEANING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
478 PLEASANT VALLEY RD			
2002-03	DIAMOND TV&SATELLITE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
484 PLEASANT VALLEY RD			
2016	GREEN SPERO	INFOUSA	SOUTH WEST
2011	TAYLOR CLIFF A DC	INFOUSA	PACIFIC
2011	TAYLOR JOHN F	INFOUSA	PACIFIC
2006	BUILDING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	ALTERBATIVE HEALING ALLIANCE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	AZTECA BAKERY & MARKET	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2006	BAHAI CENTER	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	CARLA'S LIKE YOUR STYLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND SPRINGS MOBILITY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND TV & SATELLITE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND VILLAGE CHIROPRACTIC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DUIVAS FITNESS FOR WOMEN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	ELDRO HUMANE SOCIETY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	FACTORY TEAM 2 RCNG MTR SPRTS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	FINE LINE TATOOING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	INALLIANCE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MAIN STREET MAIL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MCCULLCH MIKIO A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR CLIFF A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR CLIFF A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR JOHN DR DIAMOND V C	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR JOHN F	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2006	X [HOWARD CIR INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	ALMOST ANTIQUES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	BARGAIN BARIN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	CARLENE'S	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	DOWNTOWN DOLLS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	ELDRO HUMANE SOCIETY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HAIR BY KIMBERLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HIGH MOUNTAIN BLUE WATER TCKL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	IRON MOUNTAIN MOTORCYCLES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	KNIGHT VIRGIL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	KNIGHT'S MUSIC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MOUNATIN MAIL 2	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MULLEN MIKE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TAYLOR JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	IMAGES LIFE PHOTO	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1995-96	JACKS CABINETS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

1990	JACKS CABINETS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	LARSEN H CABINET	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
493 PLEASANT VALLEY RD			
2016	HAIR AFFAIR	INFOUSA	SOUTH WEST
2016	J & J JAVA	INFOUSA	SOUTH WEST
2016	LANDIS TOBY Y PHD	INFOUSA	SOUTH WEST
2011	CHARLOTTE'S BAKERY & CAFE	INFOUSA	PACIFIC
2011	HAIR AFFAIR	INFOUSA	PACIFIC
2011	LANDIS TOBY Y PHD	INFOUSA	PACIFIC
2002-03	DIAMOND ESORESSO&MORE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
500 PLEASANT VALLEY RD			
2016	FIRE HOUSE CAFE	INFOUSA	SOUTH WEST
2011	FIREHOUSE CAFE	INFOUSA	PACIFIC
501 PLEASANT VALLEY RD			
2002-03	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
504 PLEASANT VALLEY RD			
2006	HANSEN DENISE D LCSW	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	VENDERKAR PEF MA MPA MFT	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
515 PLEASANT VALLEY RD			
1995-96	ROHLFING FRANK	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	ROHLFING FRANK	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

517 PLEASANT VALLEY RD

1985	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

538 PLEASANT VALLEY RD

1980	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

Comment: No coverage for Diamond Springs prior to 1970.

Historical By Street Number

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Historical by Street Number

1 Pleasant Valley Rd	No Listing (1970); Street Begins (1977-2002/03); No Listing (2006); Street Begins (2011-2016)
118 Pleasant Valley Rd	No Listing (1970-1980); Hedgecock C (1985); No Listing (1990-2016)
130 Pleasant Valley Rd	No Listing (1970-1985); Food&Liquor (1990); No Current Listing (1995/96); Tower Mart (2002/03); No Listing (2006); Cab Services (2011); Tower Mart (2011-2016)
202 Pleasant Valley Rd	No Listing (1970-1985); Carsten D (1990); No Listing (1995/96-2006); Asche Bonnie (2011); No Listing (2016)
273 Pleasant Valley Rd	No Listing (1970-1990); Creative Photo Frme (1995/96-2016); Harrington P (2002/03-2006)
300 Pleasant Valley Rd	No Listing (1970-1980); No Current Listing (1985-1990); No Listing (1995/96-2016)
320 Pleasant Valley Rd	No Listing (1970-1995/96); Parisek John (2002/03); No Listing (2006-2016)
321 Pleasant Valley Rd	No Listing (1970-1995/96); Dawson Oil Co (2002/03-2016); Westwood Mbl Hms (2002/03); Apartments (2002/03)
350 Pleasant Valley Rd	No Listing (1970); Multi Tenant Residential (1977); Werstwood Mbl Hms (1977-1995/96); Westwd Mbl Hm Cmnty (1977); No Listing (2002/03); Multi Tenant Residential (2006); Westwood Mbl Hms (2006); Westwood Mobile Home Community (2006-2016)
373 Pleasant Valley Rd	No Listing (1970-1985); No Current Listing (1990); No Listing (1995/96); D&B Plumbing Supply (2002/03-2016)
385 Pleasant Valley Rd	No Listing (1970-2002/03); Eldrdo Adult School (2006); Independence High School (2011-2016)
424 Pleasant Valley Rd	No Listing (1970-1985); Tirapelle L (1990-2011); No Listing (2016)
435 Pleasant Valley Rd	No Listing (1970-1995/96); Mccune Carole (2002/03-2006); Yubacoin Inc (2002/03); Back On Track Counseling Serv (2006); Sunrise Family Medicine (2011); Mouer Labs (2016)
443 Pleasant Valley Rd	No Listing (1970-1990); Lasher Wm (1995/96-2002/03); No Listing (2006-2016)
444 Pleasant Valley Rd	No Listing (1970-1995/96); Parker John (2002/03); No Listing (2006-2016)
460 Pleasant Valley Rd	No Listing (1970-1995/96); Deb's Frosty (2002/03-2006); Smith Elaida (2002/03); No Listing (2011); Deb's Frosty (2016)
461 Pleasant Valley Rd	No Listing (1970-1995/96); Taylor Thomas (2002/03-2006); No Listing (2011-2016)
466 Pleasant Valley Rd	No Listing (1970); Weinand Kent Mrs (1977); No Current Listing (1980); No Listing (1985-2016)
470 Pleasant Valley Rd	No Listing (1970-1995/96); Bonanza Carpet Cleaning (2002/03); No Listing (2006-2016)
478 Pleasant Valley Rd	No Listing (1970-1995/96); Diamond Tv&Satellite (2002/03); No Listing (2006-2016)

484 Pleasant Valley Rd	No Listing (1970-1980); Larsen H Cabinet (1985); Jacks Cabinets (1990-1995/96); Images Life Photo (1995/96); Almost Antiques (2002/03); Bargain Barin (2002/03); Carlene's (2002/03); Downtown Dolls (2002/03); Eldro Humane Society (2002/03-2006); Hair By Kimberly (2002/03); High Mountain Blue Water Tckl (2002/03); Iron Mountain Motorcycles (2002/03); Knight Virgil (2002/03); Knight's Music (2002/03); Mounatin Mail 2 (2002/03); Mullen Mike (2002/03); Taylor John (2002/03); Building (2006); Alterbative Healing Alliance (2006); Azteca Bakery & Market (2006); Bahai Center (2006); Carla's Like Your Style (2006); Diamond Springs Mobility (2006); Diamond Village Chiropractic (2006); Duivas Fitness For Women (2006); Factory Team 2 Rcng Mtr Sprts (2006); Fine Line Tatooing (2006); Inalliance (2006); Main Street Mail (2006); Mccullch Mikio A Dc (2006-2011); Taylor John Dr Diamond V C (2006-2011); Green Spero (2016)
493 Pleasant Valley Rd	No Listing (1970-1995/96); Diamond Esoresso&More (2002/03); No Listing (2006); Charlotte's Bakery & Cafe (2011); Hair Affair (2011-2016); Landis Toby Y Phd (2011-2016); J & J Java (2016)
500 Pleasant Valley Rd	No Listing (1970-2006); Firehouse Cafe (2011-2016)
501 Pleasant Valley Rd	No Listing (1970-1995/96); No Current Listing (2002/03); No Listing (2006-2016)
504 Pleasant Valley Rd	No Listing (1970-2002/03); Hansen Denise D Lcsw (2006); Venderkar Pef Ma Mpa Mft (2006); No Listing (2011-2016)
515 Pleasant Valley Rd	No Listing (1970-1985); Rohlfing Frank (1990-1995/96); No Listing (2002/03-2016)
517 Pleasant Valley Rd	No Listing (1970-1980); No Current Listing (1985); No Listing (1990-2016)
538 Pleasant Valley Rd	No Listing (1970); No Current Listing (1977-1980); No Listing (1985-2016)
98 Pleasant Valley Rd	No Listing (1970-1980); Harshfield Collin F (1985); No Listing (1990-2016)

Comments: No coverage for Diamond Springs prior to 1970.

City Directory Standard Report

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

INFOUSA

SOUTH WEST	2016	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		130	TOWER MART
		273	CREATIVE PHOTO FRAMES
		321	DAWSON OIL CO
		350	WESTWOOD MOBILE HOME COMMUNITY
		373	D & D SUPPLY
		385	INDEPENDENCE HIGH SCHOOL
		385	INDEPENDENCE LEARNING CTR
		435	MOUER LABS
		460	DEB'S FROSTY
		484	GREEN SPERO
		493	HAIR AFFAIR
		493	J & J JAVA
		493	LANDIS TOBY Y PHD
		500	FIRE HOUSE CAFE

INFOUSA

PACIFIC	2011	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		130	CAB SERVICES
		130	TOWER MART
		202	ASCHE BONNIE
		273	CREATIVE PHOTO FRAMES
		321	DAWSON OIL CO
		350	WESTWOOD MOBILE HOME COMMUNITY
		373	D & D SUPPLY
		385	INDEPENDENCE HIGH SCHOOL
		385	INDEPENDENCE LEARNING CENTER
		424	TIRAPELLE L
		435	SUNRISE FAMILY MEDICINE
		484	TAYLOR CLIFF A DC

	484	TAYLOR JOHN F
	493	CHARLOTTE'S BAKERY & CAFE
	493	HAIR AFFAIR
	493	LANDIS TOBY Y PHD
	500	FIREHOUSE CAFE

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB) 2006 **PLEASANT VALLEY RD**

	273	CREATIVE PHOTO FRAMES
	273	HARRINGTON PATRICIA
	321	DAWSON OIL CO
	350	MULTI TENANT RESIDENTIAL
	350	WESTWOOD MBL HMS
	350	WESTWOOD MOBILE HOME COMMUNITY
	350	X [WRANGLER RD INTS]
	350	Y [COMMERCE WAY INTS]
	373	D & D PLUMBNG
	385	ELDRDO ADULT SCHOOL
	385	X [MIISOURI FLAT RD INTS]
	424	TIRAPELLI L
	435	BACK ON TRACK COUNSELING SERV
	435	MCCUNE CAROLE
	460	DEB'S FROSTY
	460	X [CHINA GARDEN INTS]
	461	TAYLOR THOMAS
	484	ALTERBATIVE HEALING ALLIANCE
	484	AZTECA BAKERY & MARKET
	484	BAHAI CENTER
	484	BUILDING
	484	CARLA'S LIKE YOUR STYLE
	484	DIAMOND SPRINGS MOBILITY
	484	DIAMOND TV & SATELLITE

	484	DIAMOND VILLAGE CHIROPRACTIC
	484	DUIVAS FITNESS FOR WOMEN
	484	ELDRO HUMANE SOCIETY
	484	FACTORY TEAM 2 RCNG MTR SPRTS
	484	FINE LINE TATOOING
	484	INALLIANCE
	484	MAIN STREET MAIL
	484	MCCULLCH MIKIO A DC
	484	TAYLOR CLIFF A DC
	484	TAYLOR CLIFF A DC
	484	TAYLOR JOHN DR DIAMOND V C
	484	TAYLOR JOHN F
	484	X [HOWARD CIR INTS]
	504	HANSEN DENISE D LCSW
	504	VENDERKAR PEF MA MPA MFT

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB) 2002-03 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	TOWER MART
130	TOWER MART
273	CRAETIVE PHOTO FRAMES
273	HARRINGTON P
320	PARISEK JOHN
321	APARTMENTS
321	DAWSON OIL CO
321	WESTWOOD MBL HMS
321	X [COMMERCE WAY INTS]
373	D & D SUPPLY
373	D&B PLUMBING SUPPLY
373	X [MISSOURI FLAT RD INTS]
424	TIRAPELLE L
435	MCCUNE CAROLE

435	YUBACOIN INC
443	LASHER WM
444	PARKER JOHN
460	DEB'S FROSTY
460	SMITH ELAIDA
461	TAYLOR THOMAS
470	BONANZA CARPET CLEANING
478	DIAMOND TV&SATELLITE
484	ALMOST ANTIQUES
484	BARGAIN BARIN
484	CARLENE'S
484	DOWNTOWN DOLLS
484	ELDRO HUMANE SOCIETY
484	HAIR BY KIMBERLY
484	HIGH MOUNTAIN BLUE WATER TCKL
484	IRON MOUNTAIN MOTORCYCLES
484	KNIGHT VIRGIL
484	KNIGHT'S MUSIC
484	MOUNATIN MAIL 2
484	MULLEN MIKE
484	TAYLOR JOHN
493	DIAMOND ESORESSO&MORE
501	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1995-96 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	NO CURRENT LISTING
273	CREATIVE PHOTO FRME
350	WESTWOOD MBL HMS
424	TIRAPELLI L
443	LASHER WM
484	IMAGES LIFE PHOTO

	484	JACKS CABINETS
	515	ROHLFING FRANK

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1990 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	FOOD&LIQUOR
202	CARSTEN D
300	NO CURRENT LISTING
350	WESTWOOD MBL HMS
373	NO CURRENT LISTING
424	TIRAPELLE L
484	JACKS CABINETS
515	ROHLFING FRANK

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1985 **PLEASANT VALLEY RD**

1	STREET BEGINS
98	HARSHFIELD COLLIN F
118	HEDGECOCK C
300	NO CURRENT LISTING
350	WESTWOOD MBL HMS
484	LARSEN H CABINET
517	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1980 **PLEASANT VALLEY RD**

1	STREET BEGINS
350	WERSTWOOD MBL HMS
466	NO CURRENT LISTING
538	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN)	1977	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		350	MULTI TENANT RESIDENTIAL
		350	WERSTWOOD MBL HMS
		350	WESTWD MBL HM CMNTY
		466	WEINAND KENT MRS
		538	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN)	1970	**PLEASANT VALLEY RD**	
		1	STREET NOT LISTED

Comment: No coverage for Diamond Springs prior to 1970.

GeoSearch
On time. On target. In touch.™

Environmental Lien

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California
95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269579
Project #: D180359
PO #: D180359-99
Date: 12/10/2018

phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.com

TARGET PROPERTY SUMMARY

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

USGS Quadrangle: ***Placerville, CA***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-120.816351, 38.677359), (-120.821951, 38.677527), (-120.821887, 38.678113), (-120.819848, 38.678096), (-120.819891, 38.680006), (-120.820835, 38.680006), (-120.820878, 38.680927), (-120.821780, 38.680927), (-120.821715, 38.683322), (-120.821865, 38.686086), (-120.822874, 38.687359), (-120.819720, 38.688867), (-120.818647, 38.689017), (-120.818582, 38.689871), (-120.820685, 38.689905), (-120.821072, 38.690374), (-120.819999, 38.690642), (-120.820235, 38.691345), (-120.819527, 38.691747), (-120.818411, 38.691312), (-120.818776, 38.693623), (-120.818411, 38.693707), (-120.817595, 38.690458), (-120.815428, 38.690273), (-120.815042, 38.690525), (-120.815063, 38.690056), (-120.817102, 38.687962), (-120.817510, 38.685332), (-120.817188, 38.685316), (-120.817166, 38.680961), (-120.817016, 38.680961), (-120.817059, 38.680123), (-120.816565, 38.679554), (-120.816651, 38.678548), (-120.816351, 38.677359)

County/Parish Covered:
El Dorado (CA)

Zipcode(s) Covered:
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

State(s) Covered:
CA

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GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of El Dorado County Recorders Records for “Environmental Liens” only on the subject property as identified as APN: 329-301-20-100, Diamond Springs, CA. and find the following:

None found

We have done a search of El Dorado County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as APN: 329-301-20-100, Diamond Springs, CA. and find the following:

None found

GeoPlus Oil & Gas Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269583
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Oil & Gas Map 3

Environmental Records Definitions 5

Disclaimer

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

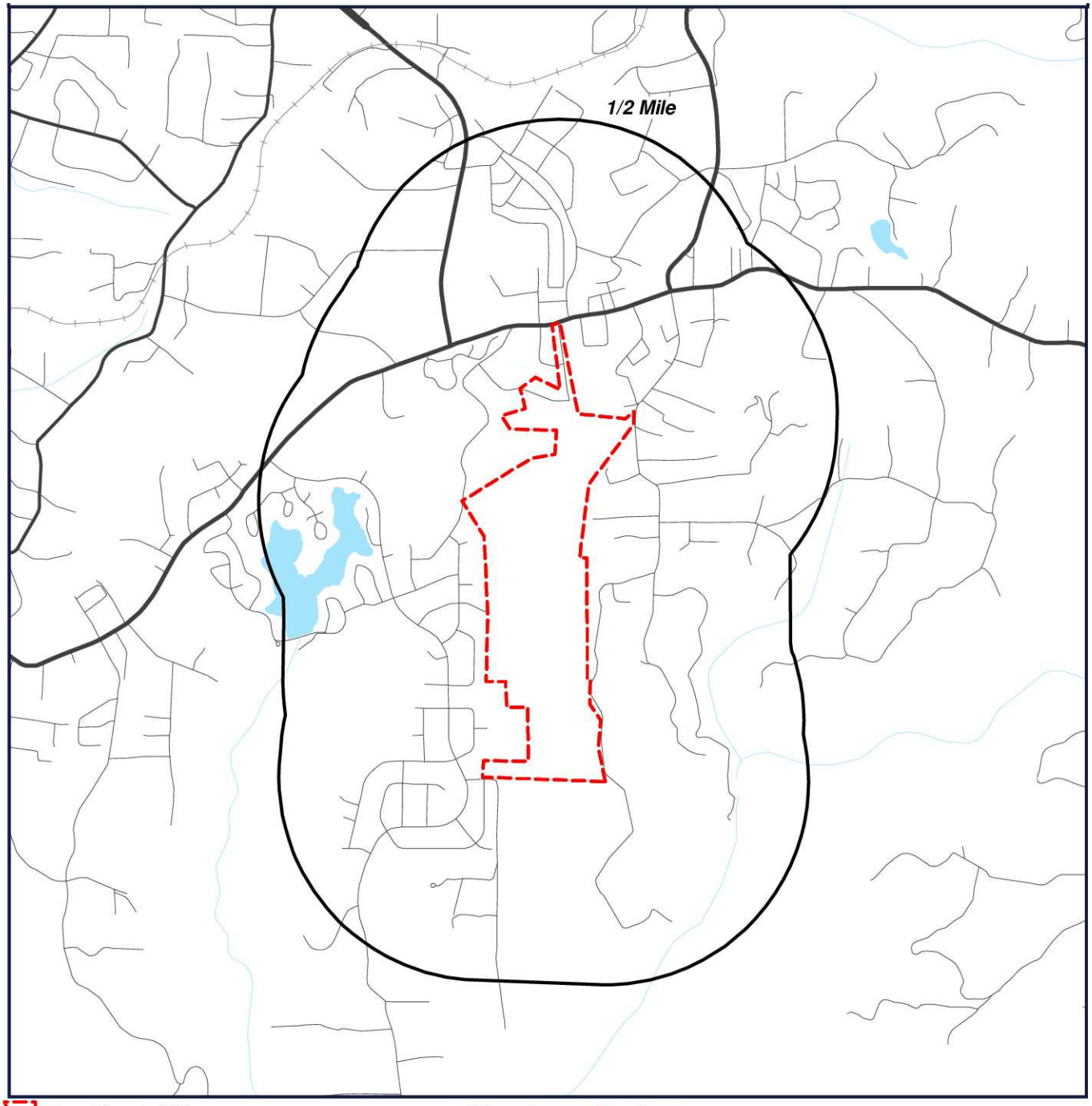
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
OG	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

OIL & GAS WELL MAP



Target Property (TP)

Well Location

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

No Records Found.

OG Oil and Gas

VERSION DATE: 04/16/18

This oil, gas, and geothermal well information database is maintained by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources. The database information may change without notice. The Department of Conservation makes no warranties, whether expressed or implied, as to the suitability of the product for any particular purpose. Any use of this information is at the user's own risk.

GeoPlus Physical Setting Maps

Satellite view

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269585
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

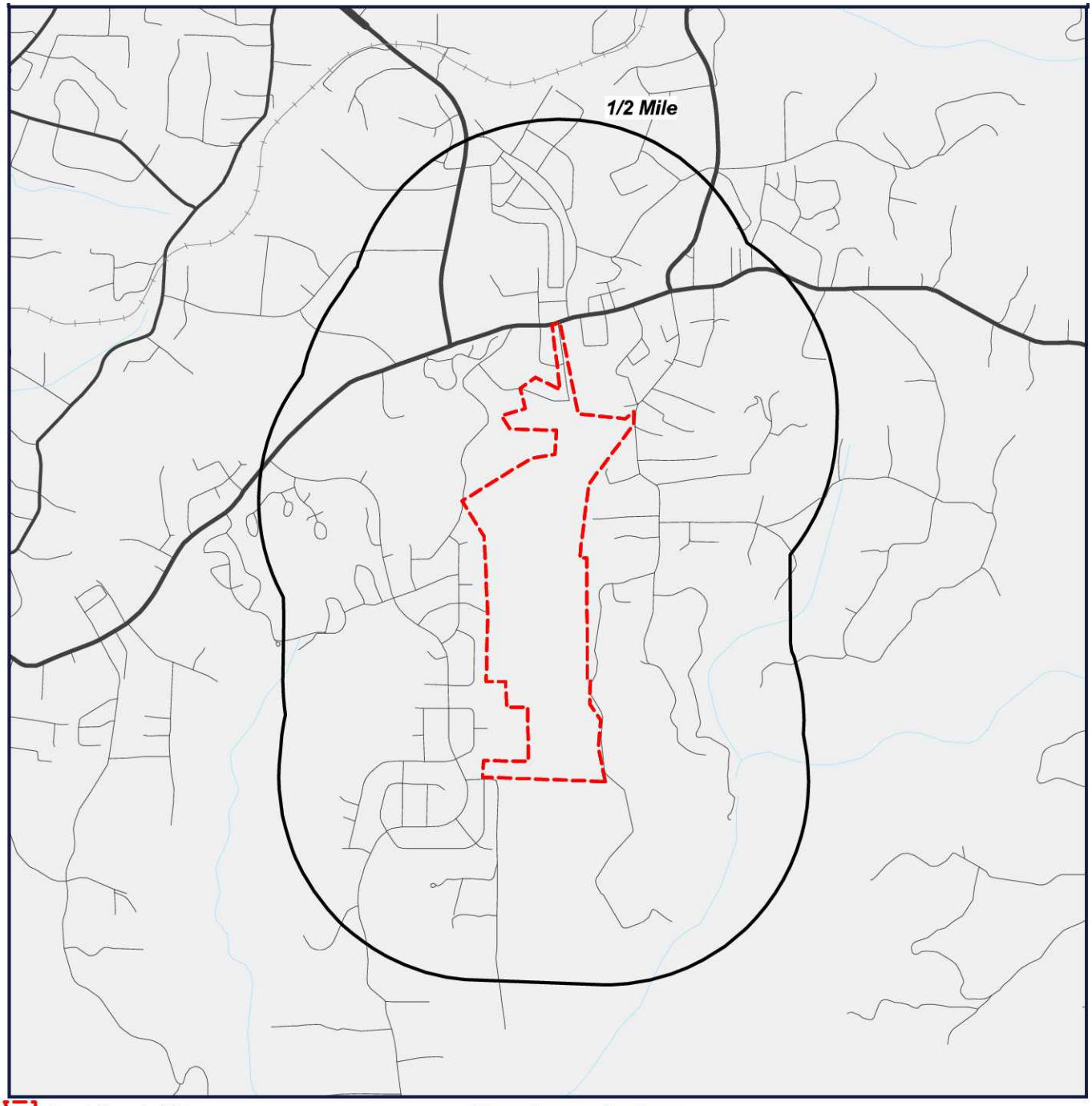
Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

FEMA Map



Target Property (TP)

ZONE A	ZONE D
ZONE AE	ZONE X
ZONE AH	AREA NOT INCLUDED
ZONE A0	OPEN WATER
ZONE AR	NDA - DIGITAL DATA NOT AVAILABLE
ZONE V	
ZONE VE	

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Letter of map revision date: 05/18/2018
Latest study effective date: 04/04/2018
Panel #: 06005C0075F

Click here to access Satellite view

FEMA Report

FEMA - Federal Emergency Management Agency

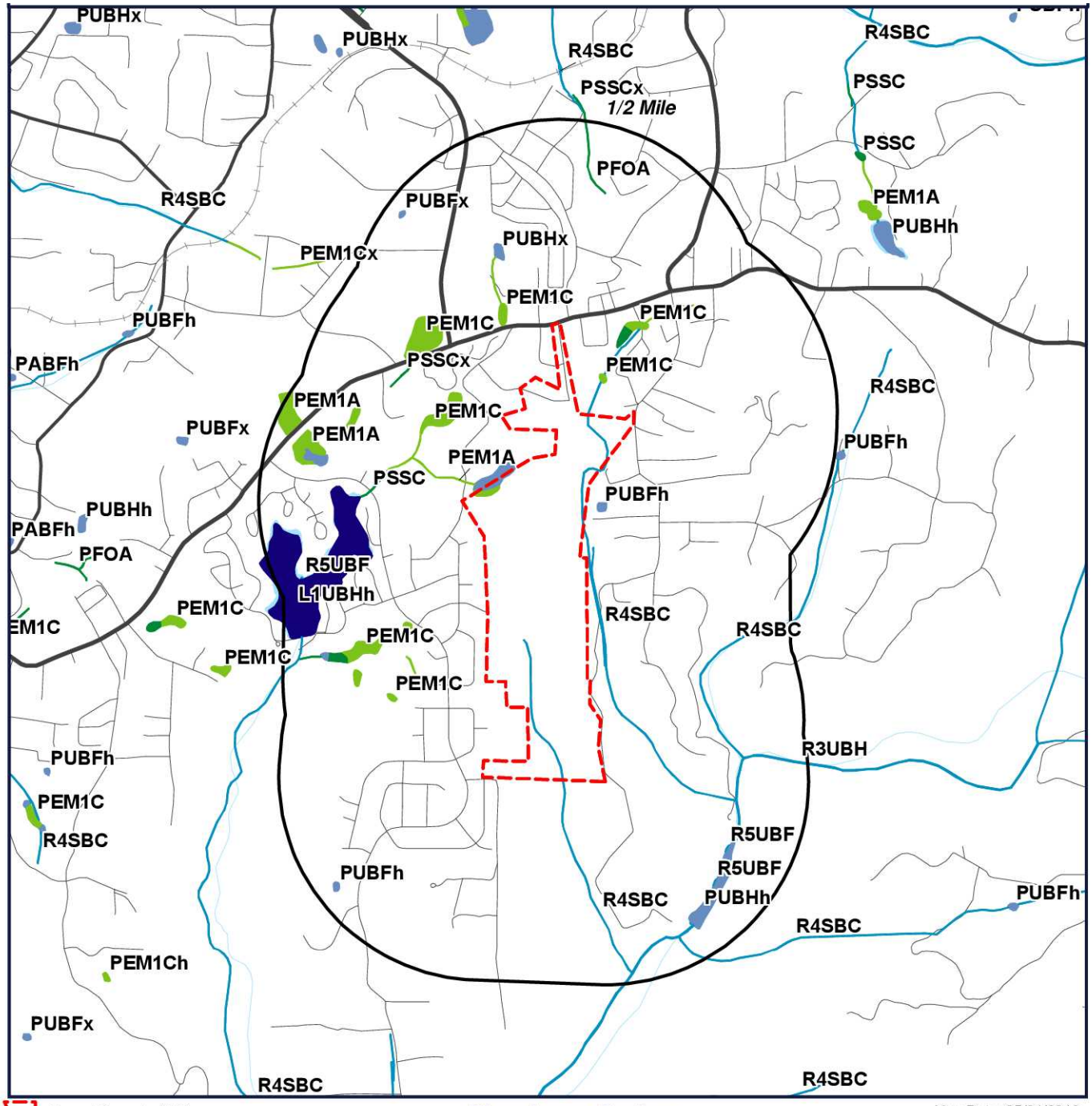
The National Flood Hazard Layer (NFHL) data used in this report is derived from the Federal Emergency Management Agency. The NFHL dataset is a compilation of effective Flood Insurance Rate Map (FIRM) databases (a collection of the digital data that are used in GIS systems for creating new Flood Insurance Rate Maps) and Letters of Map Change (Letters of Map Amendment and Letters of Map Revision only) that create a seamless GIS data layer for United States and its territories. The NFHL is updated as new study or LOMC data becomes effective. Note: Currently, not all areas have modernized FIRM database data available. As a result, users may need to refer to the effective Flood Insurance Rate Map for effective flood hazard information. This data was provided by the Federal Emergency Management Agency's Map Service Center in November of 2013.

FEMA Flood Zone Definitions within Search Radius

X	Zone X

An area that is determined to be outside the 100 and 500 year floodplains.

NWI Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

Map Date: 05/01/2018

- ESTUARINE AND MARINE DEEPWATER
- ESTUARINE AND MARINE WETLAND
- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/ SHRUB WETLAND
- LAKE
- OTHER
- RIVERINE
- FRESHWATER POND
- NDA - DIGITAL DATA NOT AVAILABLE

N W E S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

NWI Report

NWI - National Wetlands Inventory

The US NWI digital data bundle is a set of records of wetlands location and classification as defined by the U.S. Fish & Wildlife Service. This dataset is one of a series available in 7.5 minute by 7.5 minute blocks containing ground planimetric coordinates of wetlands point, line, and area features and wetlands attributes. When completed, the series will provide coverage for all of the contiguous United States, Hawaii, Alaska, and U.S. protectorates in the Pacific and Caribbean. The digital data as well as the hardcopy maps that were used as the source for the digital data are produced and distributed by the U.S. Fish & Wildlife Service's National Wetlands Inventory project. Currently, this data is only available in select counties throughout the United States.

NWI Definitions within Search Radius

L1UBHh

SYSTEM: **LACUSTRINE**
SUBSYSTEM: **LIMNETIC**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **PERMANENTLY FLOODED**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PEM1A

SYSTEM: **PALUSTRINE**
CLASS: **EMERGENT**
SUBCLASS: **BROAD-LEAVED DECIDUOUS**
WATER REGIME: **TEMPORARILY FLOODED**

PEM1C

SYSTEM: **PALUSTRINE**
CLASS: **EMERGENT**
SUBCLASS: **BROAD-LEAVED DECIDUOUS**
WATER REGIME: **SEASONALLY FLOODED**

PFOA

SYSTEM: **PALUSTRINE**
CLASS: **FORESTED**

PSSC

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**

PSSCx

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**
SPECIAL MODIFIER: **EXCAVATED**

PUBFh

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PUBFx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **EXCAVATED**

PUBHh

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PUBHx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **EXCAVATED**

R3UBH

SYSTEM: **RIVERINE**
SUBSYSTEM: **UPPER PERENNIAL**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **PERMANENTLY FLOODED**

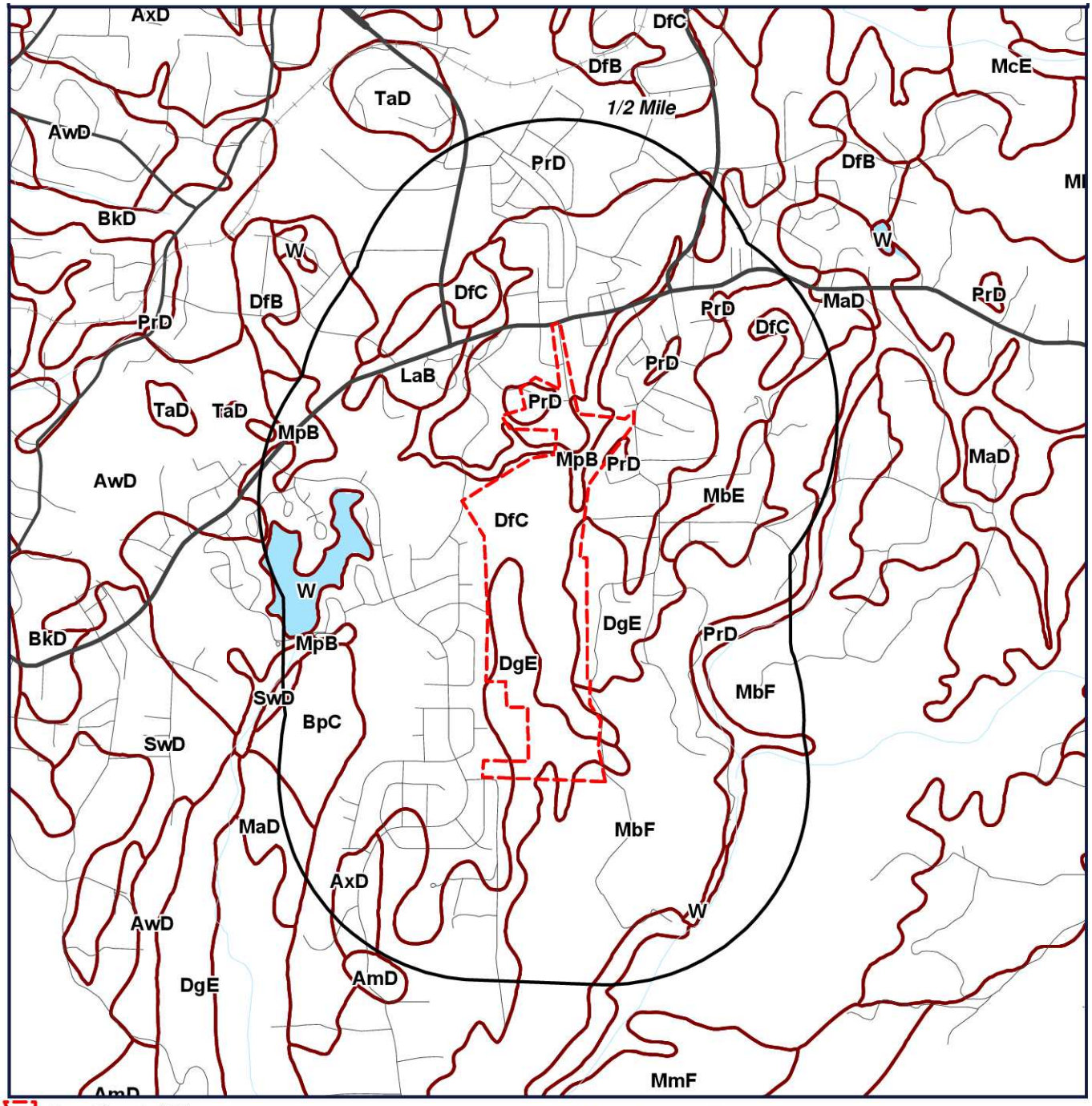
R4SBC

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **SEASONALLY FLOODED**

R5UBF

SYSTEM: **RIVERINE**
SUBSYSTEM: **UNKNOWN PERENNIAL**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **SEMIPERMANENTLY FLOODED**

Soil Map



Target Property (TP)

SOIL BOUNDARY

NOTCOM - DIGITAL DATA NOT AVAILABLE/NOT COMPLETE

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

SOIL Report

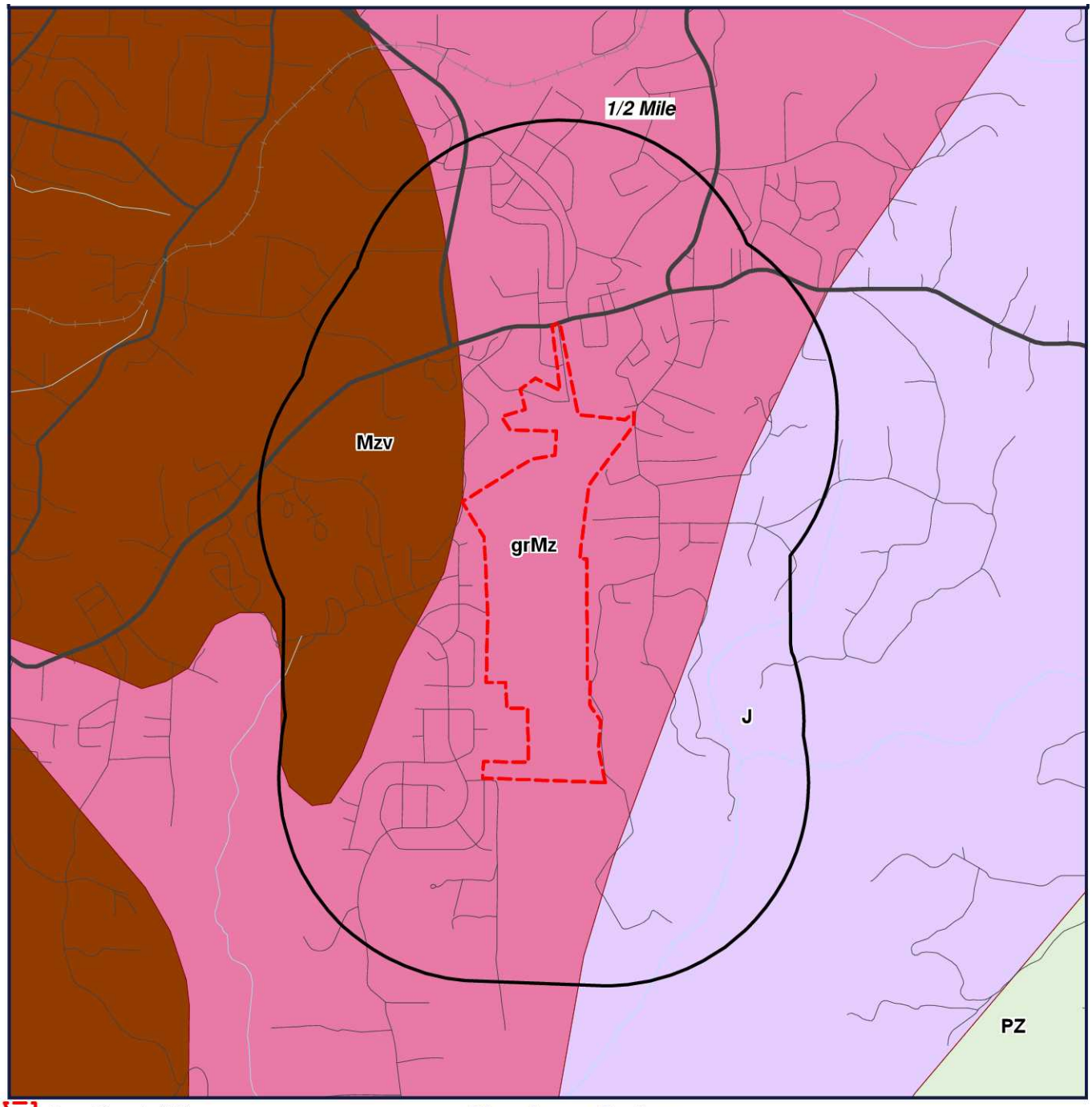
Soil Surveys

The soil data used in this report is obtained from the Natural Resources Conservation Service (NRCS). The NRCS is the primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources. The soil survey contains information that can be applied in managing farms and ranches; in selecting sites for roads, ponds, buildings and other structures; and in determining the suitability of tracts of land for farming, industry and recreation. This data is available in select counties throughout the United States.

SOIL Code Definitions within Search Radius

AwD	AUBURN SILT LOAM, 2 TO 30 PERCENT SLOPES
AxD	AUBURN VERY ROCKY SILT LOAM, 2 TO 30 PERCENT SLOPES
BpC	BOOMER-SITES LOAMS, 9 TO 15 PERCENT SLOPES
DfB	DIAMOND SPRINGS VERY FINE SANDY LOAM, 3 TO 9 PERCENT SLOPES
DfC	DIAMOND SPRINGS VERY FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES
DgE	DIAMOND SPRINGS VERY ROCKY VERY FINE SANDY LOAM, 3 TO 50 PERCENT SLOPES
LaB	LOAMY ALLUVIAL LAND
MaD	MARIPOSA GRAVELLY SILT LOAM, 3 TO 30 PERCENT SLOPES
MbE	MARIPOSA VERY ROCKY SILT LOAM, 3 TO 50 PERCENT SLOPES
MbF	MARIPOSA VERY ROCKY SILT LOAM, 50 TO 70 PERCENT SLOPES
MpB	MIXED ALLUVIAL LAND
PrD	PLACER DIGGINGS
SwD	SOBRANTE VERY ROCKY SILT LOAM, 3 TO 30 PERCENT SLOPES
TaD	TAILINGS
W	WATER

Geology Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

GEOLOGY Report

US GEOLOGY

THE GEOLOGY DATA USED IN THIS REPORT ORIGINATES FROM THE USGS. THE FIRST STAGE IN DEVELOPING STATE DATABASES FOR THE CONTERMINOUS UNITED STATES WAS TO ACQUIRE DIGITAL VERSIONS OF ALL EXISTING STATE GEOLOGIC MAPS. ALTHOUGH A SIGNIFICANT NUMBER OF DIGITAL STATE MAPS ALREADY EXISTED, A NUMBER OF STATES LACKED THEM. FOR THESE STATES NEW DIGITAL COMPILATIONS WERE PREPARED IN COOPERATION WITH STATE GEOLOGIC SURVEYS OR BY THE NSA (NATIONAL SURVEYS AND ANALYSIS) PROJECT. THESE NEW DIGITAL STATE GEOLOGIC MAPS AND DATABASES WERE CREATED BY DIGITIZING ALREADY EXISTING PRINTED MAPS, OR, IN A FEW CASES, BY MERGING EXISTING LARGER SCALE DIGITAL MAPS.

GEOLOGY Definitions within Search Radius

GEOLOGY SYMBOL: **grMz**
UNIT NAME: **Mesozoic granitic rocks, unit 3 (Sierra Nevada, Death Valley area, Northern Mojave Desert and Transverse Ranges)**
UNIT AGE: **Permian to Tertiary; most Mesozoic**
UNIT DESCRIPTION:
Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite
ADDITIONAL UNIT INFORMATION:
Sierra Nevada, Death Valley area, Transverse Ranges and Mojave Desert. Primarily granodiorite, tonalite, quartz monzonite, and granite ranging in age from Late Triassic to Late Cretaceous. Includes some rocks as old as Permian and possibly a few as young as Tertiary. Three main periods of emplacement (Triassic, Jurassic, and Cretaceous); wide variety of rock types
ROCKTYPE/S: **granodiorite; quartz monzonite; tonalite; quartz diorite; diorite; granite; monzodiorite; quartz syenite; quartz monzodiorite; gabbro; trondhjemite; alkali-granite (alaskite); pegmatite; monzonite; aplite**

GEOLOGY SYMBOL: **J**
UNIT NAME: **Jurassic marine rocks, unit 1 (Western Sierra Nevada and Western Klamath Mountains)**
UNIT AGE: **Triassic to Late Jurassic**
UNIT DESCRIPTION:
Shale, sandstone, minor conglomerate, chert, slate, limestone; minor pyroclastic rocks
ADDITIONAL UNIT INFORMATION:
Western Klamath Mountains, western Sierra Nevada. Primarily slate and metamorphosed graywacke; minor siltstone, conglomerate, chert, and volcanic rocks. Mainly Late Jurassic in age, but also includes some Early Jurassic or older rocks
ROCKTYPE/S: **slate; graywacke; siltstone; pyroclastic; conglomerate; chert; basalt**

GEOLOGY SYMBOL: **Mzv**
UNIT NAME: **Mesozoic volcanic rocks, unit 2 (Western Sierra Foothills and Western Klamath Mountains)**
UNIT AGE: **Jurassic**
UNIT DESCRIPTION:
Undivided Mesozoic volcanic and metavolcanic rocks. Andesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks; in part strongly metamorphosed. Includes volcanic rocks of Franciscan Complex: basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks
ADDITIONAL UNIT INFORMATION:
Western Sierra Nevada and western Klamath Mountains. Mostly basaltic to andesitic breccias, flows, and tuffs, metamorphosed but with primary volcanic features generally recognizable. Minor associated sandstone and conglomerate. Largely or entirely of marine origin. Includes some rocks interpreted as ophiolites (Smartville complex)
ROCKTYPE/S: **mafic volcanic rock; intermediate volcanic rock; felsic volcanic rock; chert; sandstone; conglomerate**

GeoPlus Water Well Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269582
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Disclaimer

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

Database Radius Summary

FEDERAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
NWIS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0

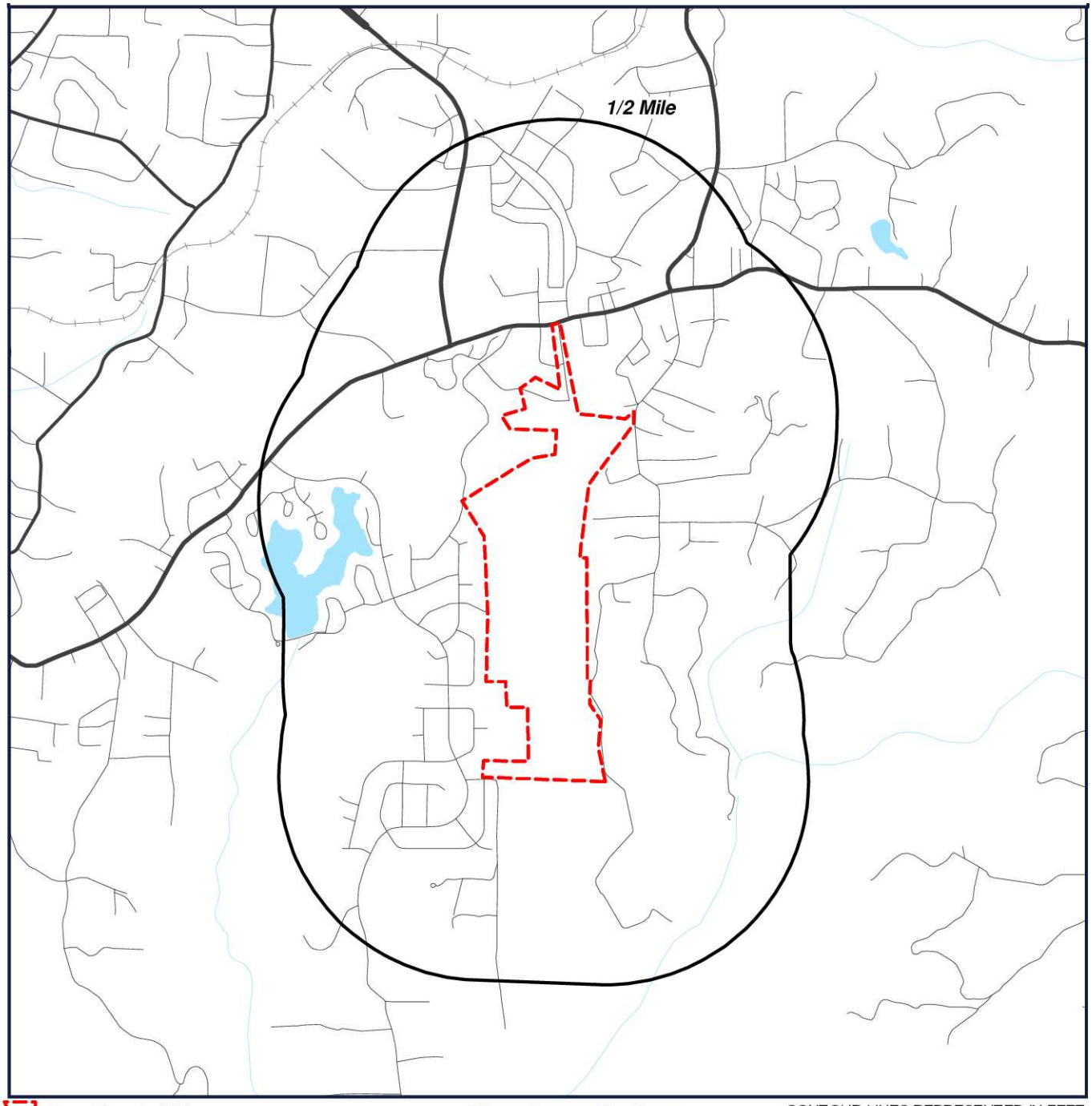
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
DWRWELLS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Waterwell Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

CONTOUR LINES REPRESENTED IN FEET

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

No Records Found.

NWIS United States Geological Survey National Water Information System

VERSION DATE: 12/14/16

This USGS National Water Information System database only includes groundwater wells. The USGS defines this well type as: A hole or shaft constructed in the earth intended to be used to locate, sample, or develop groundwater, oil, gas, or some other subsurface material. The diameter of a well is typically much smaller than the depth. Wells are also used to artificially recharge groundwater or to pressurize oil and gas production zones. Additional information about specific kinds of wells should be recorded under the secondary site types or the Use of Site field. Underground waste-disposal wells should be classified as waste-injection wells.

DWRWELLS California Department of Water Resources Water Wells

VERSION DATE: 05/09/18

The California Department of Water Resources (DWR) maintains this database of water wells, including California Statewide Groundwater Elevation Monitoring (CASGEM) program wells and Voluntary wells. In Late 2009 the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. To achieve that goal, the amendment requires collaboration between local monitoring entities and DWR to collect groundwater elevation data. In accordance with this amendment to the Water Code, DWR developed the CASGEM program.

DORADO OAKS TENTATIVE TRACT MAP PROJECT
FAITH LANE
DIAMOND SPRINGS, CALIFORNIA

Phase I Environmental Site Assessment

Prepared for
Stonehenge Springs, LLC

April 2019

ESA



DORADO OAKS TENTATIVE TRACT MAP PROJECT
FAITH LANE
DIAMOND SPRINGS, CALIFORNIA

Phase I Environmental Site Assessment

Prepared for
Stonehenge Springs, LLC

April 2019

1425 N. McDowell Boulevard
Suite 200
Petaluma, CA 94954
707.795.0900
www.esassoc.com

ESA

Bend	Oakland	San Francisco
Camarillo	Orlando	Santa Monica
Delray Beach	Pasadena	Sarasota
Destin	Petaluma	Seattle
Irvine	Portland	Sunrise
Los Angeles	Sacramento	Tampa
Miami	San Diego	

180359

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

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Faith Lane
Diamond Springs, California

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SECTION 1.0
Executive Summary

ESA compiled this Executive Summary using excerpts from the Phase I Environmental Site Assessment report that follows. This Executive Summary may not provide all the information necessary to fully characterize the site and gain an understanding of the issues nor does it detail the Phase I assessment and its findings. ESA does not recommend sole reliance on this Executive Summary.

This Phase I Environmental Site Assessment was conducted on behalf of Stonehenge Springs, LLC (Stonehenge) for six parcels located along Faith Lane in Diamond Springs in El Dorado County, California (project site) (see **Figures 1 and 2**). This report was prepared in general accordance with guidance from the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13). Any exceptions to, or deletions from, this practice are described in the Scope of Services and Limitations and Exceptions sections of this report.

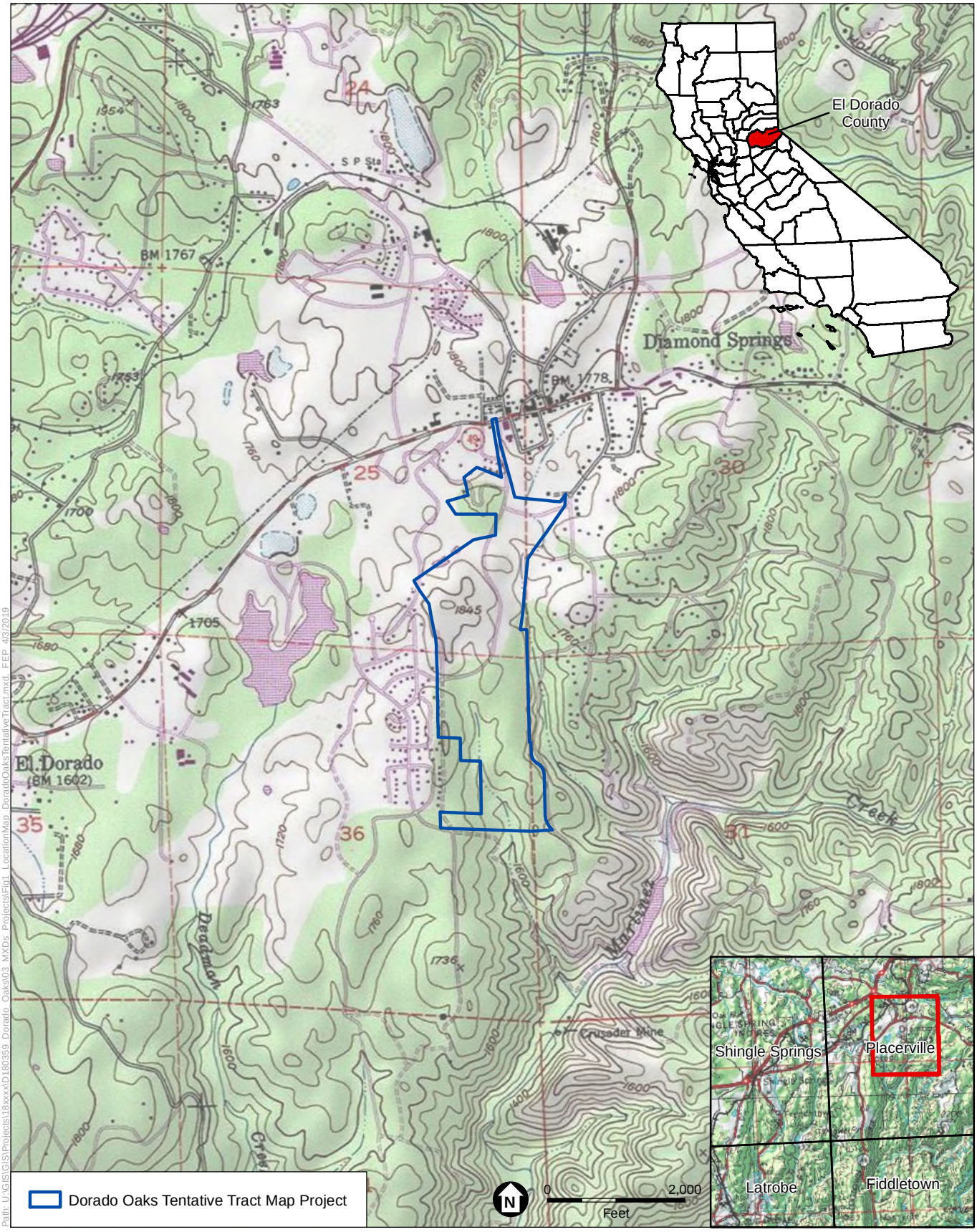
Stonehenge is considering developing six combined parcels of approximately 144 acres for residential housing. The parcels are mostly undeveloped oak and pine forest, brush, and grassy areas. The mostly unpaved Faith Lane bisects the parcels north to south, and other unpaved roads and graded areas are present. One sewage lift station is the only development on the project site.

Based on the information reviewed and described in this report, a site reconnaissance of the subject property, and interviews with persons knowledgeable about the subject property, this assessment has noted the following in connection with the subject property:

- The reworking of the surface topography indicates that mining activities conducted in the late 1800s used placer mining techniques where the gold was separated using water and gravity. No mining equipment or associated contamination was observed during the site reconnaissance. The mining activities are not considered a Recognized Environmental Conditions (REC). Note: These terms are defined in Section 2.1.
- A raw sewage spill occurred in 1994 at the lift station on APN 329-310-10. No visual evidence of sewage or discolored soil at or around the lift station was observed during the January 2019 site reconnaissance. This is considered a Historical Recognized Environmental Condition (HREC) and not a current Recognized Environmental Condition (REC).

- With the exception of the lift station noted above, the project site is not identified as a location of soil or groundwater contamination on any of the regulatory databases that were searched.
- One former service station was previously located at 493 Main Street (now Pleasant Valley Road/State Route 49), about 250 feet northeast of the northernmost part of the project site. Two gasoline underground storage tanks (USTs) were removed in 1992 and the Regional Water Quality Control Board (RWQCB) issued a No Further Action (NFA) letter in 1996. However, the NFA letter states that contaminated soil and groundwater are present along the south side of the former service station site extending south to some unknown distance beneath State Route 49 and toward the project site. It is unknown whether the contamination extends to beneath the project site and there is no definitive visual indication of the former UST locations. **This is considered an REC because excavation for the project close to or under State Route 49 may encounter contaminated soil and groundwater.**
- The site reconnaissance observed occasional trash and debris piles in scattered locations throughout the southern portion of the project site. However, the discarded trash and debris is considered a *de minimus* condition because the materials can readily be recycled or disposed of at any municipal (Class III non-hazardous waste) landfill.

This Phase I Environmental Site Assessment did not identify any other RECs, HRECs, Controlled Recognized Environmental Conditions, or business environmental risks. This report should be read in its entirety for a comprehensive understanding of the proposed project conditions described.



SOURCE: USGS 7.5' Topo Quad (Placerville, 1950); ESA, 2019

Dorado Oaks Tentative Tract Map Project

Figure 1
Location Map

ESA

Path: U:\GIS\GIS\Projects\18xxxx\ID180359_Dorado_Oaks\03_MXDs_Projects\Fig1_LocationMap_DoradoOaksTentativeTract.mxd_FEP_4/3/2019

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SOURCE: Google (Imagery date June 25, 2018); ESA, 2019

Dorado Oaks Tentative Tract Map Project

Figure 2
Project Map

ESA

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SECTION 2.0
Introduction

2.1 Purpose, Standards, and Definitions

Stonehenge Springs, LLC, retained Environmental Science Associates (ESA) to conduct a Phase I Environmental Site Assessment for the Dorado Oaks Tentative Tract Map Project located in Diamond Springs in Sonoma County, California (see **Figures 1 and 2**). This Phase I assessment was conducted in accordance with ESA's scope of work with Stonehenge dated November 11, 2018 and in general accordance with the American Society of Testing Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13) and the U.S. Environmental Protection Agency (US EPA) Final Rule regarding Standards and Practices for All Appropriate Inquiries as published in the Federal Register on November 1, 2005 (70 FR 66070) and codified at 40 CFR Part 312 (AAI Rule). The US EPA has stated that the newly revised ASTM E1527-13 is consistent with the AAI rule (78 FR 79319, December 30, 2013). Specifically, this final rule amends the AAI Rule at 40 CFR Part 312 to reference ASTM E1527-13 and make clear that persons conducting all appropriate inquiries may use the procedures included in this standard to comply with the AAI Rule.

The purpose of this Phase I assessment is to enable the parties relying on it to satisfy one or more of the requirements for the innocent landholder defense to liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and to evaluate the potential for Recognized Environmental Conditions (RECs) at the Project site in advance of Project development. Three types of RECs are defined by the ASTM E1527-13, as listed below. The term Recognized Environmental Conditions (REC) means:

> "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The term Historical Recognized Environmental Conditions (HREC) means:

> "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is

conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."

For a past REC to be considered an HREC it must:

- Have already been remediated (or meet current standards without remediation);
- Not require use restrictions or engineering controls (e.g., cap, subslab depressurization system, etc.); and
- Meet current standards.

If the REC has use restrictions or engineering controls (e.g., caps, control and treatment systems), then the REC may be designated as a Controlled Recognized Environmental Condition (CREC), as defined below. Unlike HRECs, a CREC will be listed in the conclusions section of the Phase I assessment, along with other RECs. The purpose of this category is to bring continuing obligations such as use restrictions, maintenance requirements, reporting requirements to the forefront. The term Controlled Recognized Environmental Conditions (CREC) means:

> "A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."

RECs, HRECs, and CRECs are not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

An additional category is termed business environmental risk, defined as

> "A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations."

2.2 Scope of Services

The following sections describe ESA's work scope:

Section 2, *Introduction*, includes a discussion of the purpose for performing the Phase I assessment; the standards and definitions used for the Phase I assessment; and the significant assumptions and limitations.

Section 3, *Site Description*, compiles information concerning the location, legal description, current and proposed use, a description of any structures and improvements at the time of ESA's assessment, and adjoining property use for the parcels.

Section 4, *Records Review*, includes ESA's review of various databases available from the federal, state, and local regulatory agencies regarding hazardous materials use, storage, or disposal at the parcels. Client-provided information is summarized and copies of relevant documents are included in the appendices of this report. Physical setting information such as topography, soil, and groundwater conditions are described.

Section 5, *Site Reconnaissance*, describes ESA's observations during reconnaissance of the parcels. The methodology used and limiting conditions are described.

Section 6, *Interviews and User Provided Information*, summarizes telephone and personal interviews conducted with Key Site Managers and persons knowledgeable about site conditions and history.

Section 7, *Findings and Opinions*, presents ESA's findings and professional opinions regarding the information contained in this report. It provides ESA's conclusions regarding the presence of RECs connected with the ten parcels and data gaps, if any, that could affect the recognition of RECs.

Section 8, *Report Authors and Qualifications*, provides the signatures and qualifications of the report authors.

Section 9, *References*, is a summary of the resources used to compile this report that are in addition to the information provided in the appendices.

The appendices contain certain pertinent documentation regarding the parcels. Appendices A and B contain the regulatory agency database search results report, historical aerial photographs and topographic maps, fire insurance map and city directory search results, and the permit history. Appendix C provides the results of the interview questionnaire.

2.3 Limitations and Exceptions

No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with a property. Conformance of this Phase I

assessment with ASTM E1527-13 reduces, but does not eliminate, uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with the subject property. While ESA has made every effort to discover and interpret available historical and current information on the properties within the time available, some potential always remains for undiscovered contamination to be present. ESA's report is a best-efforts collection and interpretation of available information, and cannot be considered wholly conclusive. This report and the associated work were provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This is in lieu of all warranties, expressed or implied. No other warranty is expressed or implied. ASTM E1527-13 is included in this report by reference.

This Phase I assessment is based primarily on historical research, a database review, and a site reconnaissance of accessible areas. This Phase I assessment does not include "non-scope issues" as specified by ASTM E1527-13, such as surveys for the presence of the following items on or in the vicinity of the subject property: asbestos-containing materials (ACMs), polychlorinated biphenyls (PCBs), radon, indoor air quality, lead-based paint (LBP) analysis, lead in drinking water, industrial hygiene, health and safety, regulatory compliance, and high voltage lines.

The conclusions presented are professional opinions based solely upon indicated data described in this report, visual site and vicinity observations, and the interpretation of the available historical information and documents reviewed, as described in this report. Unless ESA has actual knowledge to the contrary, information obtained from interviews or provided to ESA is assumed to be correct and complete. ESA does not assume any liability for information that was misrepresented to ESA by others or for items not visible, accessible, or present on the parcels during the time of the site reconnaissance. The conclusions are intended exclusively for the purpose outlined herein and the site location and project indicated. Any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of the user.

Opinions and recommendations presented herein apply to the site conditions existing at the time of this Phase I assessment and cannot necessarily apply to site changes of which ESA is not aware and has not had the opportunity to evaluate. Changes in the conditions of the parcels may occur with time due to natural processes or the works of man on the property or adjacent properties. Changes in applicable standards may also occur as a result of legislation, regulation, or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond ESA's control. Opinions and judgments expressed herein are based on ESA's understanding and interpretation of current regulatory standards, and should not be construed as legal opinions.

SECTION 3.0
Site Description

3.1 General Setting and Location

The project site is located in Diamond Springs on the western slopes of the Sierra Nevada and consists of six undeveloped parcels with one paved access road, several sections of unpaved roads, and one sewer lift station. The parcels are mostly hilly and slope to the south with some flat areas. The majority of the project suite shows the residual surface reworking of late 1800s placer mining activities. The project site consists of six parcels with the Assessor Parcel Number (APN), acreage, land use, zoning, and development information tabulated below in **Table 3-1**. The regional location and project site are shown on **Figures 1 and 2**.

TABLE 3-1
LOCATION AND ZONING

APN	Acres	Development	Land Use	Zoning
054-402-18	1.549	Paved road	MFR	RM
329-301-15	4.08	None	MFR	RM
329-301-20	4.86	None	MFR	RM
329-310-10	69.47	Sewer lift station	HDR	R1
329-310-11	6.38	None	HDR	R1
329-310-12	57.39	None	HDR	R1
Total	143.729			

NOTES:
RM = Multi-Unit Residential
R1 = Single Unit Residential District
HDR = High Density Residential
MFR = Multi-Family Residential
SOURCE: El Dorado County, 2018

3.2 Current and Proposed Land Uses

The project site currently has no developed use, other than the sewer lift station. Stonehenge is considering developing the parcels with residential units.

SECTION 4.0
Records Review

The purpose of the records review is to obtain and examine records that could help to evaluate potential RECs, HRECs, and CRECs in connection with the parcels. This section documents the database records search, the evaluation of other records, summarizes information provided by the property owners, and describes the physical setting of the parcels.

4.1 Standard Environmental Record Sources

Federal, state, and local regulatory agencies publish databases of businesses and properties that handle hazardous materials or hazardous waste, including those properties with a known release of hazardous substances to soil and/or groundwater. These databases are available for review and/or purchase at the regulatory agencies, or the information may be obtained through a commercial database service. ESA contracted with a commercial database service to perform the regulatory agency database search for listings within the appropriate ASTM Standard minimum search distance (GeoSearch, 2018). A detailed description of the types of information contained in each of the databases reviewed and the agency responsible for compiling the data is included in the Radius Report provided as **Appendix A**, which includes a list of acronyms for the individual searched databases.

ESA evaluated the listings with regard to the nature of potential chemicals of concern, the extent of known releases, and the physical setting of the parcels (e.g., soil properties, geology, and seismicity). In general, reported or potential releases likely to affect a property would include those located on or within 1/8-mile radius of the parcels. Sites that are reported to use or have used hazardous materials but do not have any records of leaks, spills, or releases are not considered further since such sites would not have affected the project site. ESA also considered additional factors such as chemical properties, regional knowledge of the site vicinity, groundwater flow direction, and available past regulatory documentation as part of the REC evaluation.

4.2 Results of Database Search

All information on hazardous materials sites is from the regulatory database search (GeoSearch, 2018) unless otherwise indicated. Updates to the regulatory agency database records search were acquired by checking the State Water Resources Control Board (SWRCB) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor websites to search for other possible site listings and updated information to the database search, and to identify sites that have been recently cleanup and closed after the database search was conducted.

Subject Parcel Listings

The following two listings are located within the project site with locations shown on Figure 1. The site numbers are keyed to the listings and maps in the regulatory database report in Appendix A.

1 – Deb's Frosty Lift Station – A raw sewage leak was reported on December 16, 1994, at the sewer lift station located on APN 329-310-10. The spill reportedly went to a nearby culvert. Cleanup was conducted by the El Dorado Irrigation District. As discussed below in Section 5.3, Site Observations, no visual evidence of sewage or discolored soil or concrete was observed at or around the lift station during the January 2019 site reconnaissance. Therefore, this is considered a HREC and not a current REC.

2 - Phillip N. Hufft mining claim – A claim for placer gold mining is listed under the name of Phillip N. Hufft and the majority of the project site shows extensive evidence of reworking for placer mining operations. No mining equipment or associated contamination was observed during the site reconnaissance. An internet check of the mining name claim identified a Phillip Newton Hufft that died in Placerville on February 7, 1878, suggesting that this is a gold rush-era claim that is still listed but hasn't been active since the late 1800's. The mining operations appear to have used placer mining techniques where gold was separated using water and gravity. This technique would not have used chemicals, such as mercury. Therefore, this placer mining operation is not anticipated to have resulted in residual environmental issues and is not considered a REC.

Offsite Listings

Twenty-one offsite locations were listed for hazardous materials use within the ASTM search distances. However, most of the offsite listings are listings for routine hazardous materials use or disposal but with no records of spills, leaks, or releases. Sites with no records of leaks, spills, or releases are not considered further.

The following 12 sites are located upgradient of or near to the project site and have records of spills, leaks, or releases. The site numbers are keyed to the listings and maps in the regulatory database report in Appendix A. As discussed below, only the former service station identified as Site #8 is considered a REC.

4 – Illegal drug lab – This site was located adjacent to the eastern border of APN 329-310-10 and reported in 2002. No additional information was available. The site was not listed on the DTSC EnviroStor website, which tracks active cleanup sites under their jurisdiction. Given the date of the lab discovery and the lack of an active listing, this site is considered to be an HREC but not a current REC.

4 – Potable water leak – About 1,000 gallons of potable water was released from a pipe break in 2004. However, given that the released material was water treated to drinking water standards, this would not be a hazardous material and would not have adversely affected the project site.

6 – Waste water spill – About 300 gallons of waste water was spilled into a drainage ditch in 2008. No information was listed regarding the nature of the waste water, the extent of the spill, or the cleanup activities. Given the date of the spill, this spill is considered unlikely to be a continuing environmental concern. This site is considered to be an HREC but not a current REC.

8 – Former service station – One former service station was previously located at 493 Main Street (now Pleasant Valley Road/State Route 49), about 250 feet northeast of the northernmost part of the project site (GeoSearch, 2018; RWQCB, 1996). Two 500-gallon gasoline USTs were removed in 1992. The USTs had numerous holes and the surrounding soil was contaminated. Although the RWQCB issued a No Further Action (NFA) letter in 1996, the NFA letter states that contaminated soil and groundwater are present along the south side of the former service station site extending south to beneath State Route 49 and toward the project site. Soil samples from the south wall of the UST excavation facing State Route 49 had 540 milligrams per kilograms (mg/kg) of total petroleum hydrocarbons (TPH) as gasoline, 1.4 mg/kg of toluene, 2.2 mg/kg of ethylbenzene, and 11 mg/kg of xylenes. Soil samples collected further south and closer to State Route 49 had 260 to 1,400 mg/kg of TPH as gasoline, 0.49 to 3.8 mg/kg of toluene, non-detect to 16 mg/kg of ethylbenzene, and 3.0 to 86 mg/kg of xylenes. In addition, groundwater collected from the excavation pit had 40 micrograms per liter (ug/L) of TPH as gasoline, 500 ug/L of benzene, 1,200 ug/L of toluene, 410 ug/L of ethylbenzene, and 3,000 ug/L of xylenes. The RWQCB concluded that contaminated soil and groundwater extends to an unknown distance beneath State Route 49. It is unknown whether the soil and groundwater contamination extends further to beneath the project site. Note that the available records did not include maps showing the location of the USTs or contamination. **This is considered an REC because excavation for the project close to and possibly south of State Route 49 may encounter contaminated soil and groundwater.**

12 – Waste connections – This site is a waste recycling and disposal center located at 4100 Throwita Way that was constructed on a former lime processing facility. The environmental concern is that lime has an elevated pH that could threaten groundwater quality. However, the direction of groundwater flow is to the northwest away from the project site (Youngdahl, 2018). Therefore, any contamination issues with the former lime processing center would be unable to affect the project site.

14 – Foothill Auto Repair – The site is listed for poor housekeeping that allowed solvents, antifreeze, and waste oil to be spilled on the ground (GeoSearch, 2019). However, a nearby well was sampled and the testing results indicated that the spills had not migrated to groundwater. Therefore, any contamination issues with the auto repair facility were limited to the repair facility and would be unable to affect the project site.

16 – Steve's Cheaper – This service station, now a Tower Chevron station, located at 130 Pleasant Valley Road had leaking gasoline USTs that contaminated groundwater in 1997. Remediation was complete by 2012 and the RWQCB issued a no further action letter by 2013. In addition, the site is located about 3/4-mile southwest and downgradient of the project site. Therefore, any contamination issues with this service station would be unable to affect the project site.

18 and 21 – Celebrity Plating – This site is a plating shop cited for poor housekeeping with cyanide, chromium, nickel, and other metals detected in soil from spills. However, this site is located about ½-mile north of the project site. Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). In addition, the DTSC determined that this site does not pose a threat to other properties. Therefore, any contamination issues with this site would be unable to affect the project site.

20 – Teters Auto Wrecking – This site, located about ½-mile north of the project site, is listed as a one-acre auto wrecking yard in 1987 based on the nature of the site activities. No further investigation is documented, no records of spills, leaks, or releases are recorded, and the site is listed as a low priority. Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). Therefore, any contamination issues with this site would be unable to affect the project site.

22 – Oxygen Service and Supply Company – This site, located about ½-mile north of the project site, is an oxygen service and supply facility listed due to the nature of the facility. No further investigation is documented, and no records of spills, leaks, or releases are recorded. Investigations at the nearby Site 12, discussed above, indicated that the direction of groundwater flow is to the northwest, away from the project site (Youngdahl, 2018). Therefore, any contamination issues with this site would be unable to affect the project site.

23 – Old Caldor Lumber Company – This site, located about 3/4-mile north of the project site, is a former lumber yard, listed due to the nature of the previous activities. The DTSC completed a Preliminary Endangerment Assessment in 1989 and concluded that this site does not pose a threat to public health or the environment (GeoSearch, 2018). Therefore, any contamination issues with the former lumber yard would be unable to affect the project site.

Sites with Poor or Inadequate Addresses

Sites not plotted due to poor or inadequate address information are referred to as orphan sites. Three orphan sites were listed. The Union Mine address is about 1-½ mile to the southwest and cross- to downgradient of the project site. The two Bright Court addresses are located about one mile west of the project site and cross gradient of the project site. These three orphan site listings are not upgradient of the project site and would not be able to affect the project site.

4.3 Other Records Reviewed

ESA accessed websites for the State Water Resources Control Board (SWRCB) and Department of Toxic Substance Control (DTSC) that track hazardous materials sites. In addition, the regulatory agency records search provides historical aerial photographs, historical topographic maps, and a search of Sanborn insurance maps and city directories for review. The results of the review of these records are discussed below.

Hazardous Materials Websites

ESA accessed the SWRCB and DTSC combined online GeoTracker database at http://geotracker.waterboards.ca.gov/ and EnviroStor database at http://www.envirostor.dtsc.ca.gov/public for cleanup sites located on or near the subject property under SWRCB jurisdiction. The six parcels are not listed on the website. The former service station previously located at 493 Main Street is discussed above as Site 2 was listed and the available information incorporated above. The Youngdahl, 2018, report was acquired from the GeoTracker website and used to augment the discussions above for Sites 12, 18, 20, 21, and 22. No other active sites were listed upslope (upgradient) of the subject parcel.

Historical Aerial Photographs

Historical aerial photographs are available for the years 1946, 1952, 1964, 1975, 1980, 1984, 1993, 2004, 2005, 2006, 2009, 2010, 2012, 2014, and 2016, included in **Appendix B** (GeoSearch, 2018). The 2018 aerial photograph is used as the base for Figure 2.

1946

The 1946 aerial photograph shows the project site largely in the current undeveloped condition with State Route 49 in its current alignment. Faith Lane and Silver Drive are not yet present. Evidence of the placer mining activities conducted south of State Route 49 in the late 1800's has been muted by time, consisting of various unpaved roads, paths, and other ground surface works. No mining equipment is visible in the photograph, assuming any had been used for placer mining. Two rectangular structures of unknown use are visible inside the green oval in the middle of the project site. The northernmost portion of the project site next to State Route 49 has what appears to be an orchard with two structures likely to be a residence and agricultural support structure. As discussed above in the regulatory records search, a service station with USTs removed in 1992 was reportedly present at the location in the blue oval. A building is present within the blue oval and does not appear to be different from the present building occupying this location. The site reconnaissance observed the building is identified as the Gust Brothers Building constructed in 1930. No obvious fuel islands are visible, although the 1946 station configuration may have been different from modern fuel island configurations. Given the documentation of a fuel leak next to and underneath State Route 49, the USTs and fuel dispensers are assumed to have been located between the building and the highway or perhaps along the side of the building near the highway. The surrounding area is a mix of rural use with some development. The graveyard, Carpenter house, and Morrill building identified on Figure 2 are present.

1952

In the 1952 aerial photograph, the two structures that were in the green oval are gone. Almost all of the orchard and building closest to State Route 49 are also gone; the assumed agricultural structure set further back from the highway is still present.

1964

The 1964 aerial photograph shows one unpaved road entering the northwestern area but no other apparent changes on the project site.

1975

The 1975 aerial photograph shows Faith Lane in its current alignment. The Diamond Springs shopping center is also present just east of the northernmost portion of the project site.

1980

The 1980 aerial photograph is of poor quality and does not appear to show any changes.

1984

The 1984 aerial photograph is of poor quality but shows some grading associated with previous development efforts that did not proceed beyond some initial grading.

1993

The 1993 aerial photograph is of good quality and shows the grading of roads and other areas.

2004

The 2004 aerial photograph shows the existing sewer lift station structure in the green oval.

2005 through 2016

The 2005 through 2016 aerial photographs show no substantive changes.

Historical Topographic Maps

Historical topographic maps are available for the years 1891, 1892, 1893, 1949, 1950, 1973, and 2012, and are included in **Appendix B** (GeoSearch, 2018).

The 1891, 1892, 1893 are all small scale topographic maps (1:125,000-scale) that provide limited detail, but each show the project site with no development and State Route 49 in its current alignment. One unimproved road is shown along the western side of the project site. The 1949 topographic map is a larger scale map (1:24,000-scale) and shows China Garden Road and other nearby roadways. Diamond Springs is shown largely as currently developed. The 1950, 1973, and 2012 topographic maps show no substantive changes, though Faith Lane and Silver Road appear on the 1975 and later maps.

Fire Insurance Maps

Fire insurance maps did not cover the area of the project site, as documented in Appendix B (GeoSearch, 2018).

City Directory

A city directory search was conducted for the project site and nearby parcels (GeoSearch, 2018). No listings were available for Faith Lane properties. The search report is in Appendix B.

Permit History

Previous residential development efforts referred to as the Missouri Flat-Diamond Springs Redevelopment Project in the early 1980s proceeded as far as some limited initial grading visible beginning with the 1984 aerial photograph, discussed above (Snoke, 1984). The project did not proceed further. The Eldorado County online permit website was checked for violations; no violations were recorded (El Dorado County, 2019).

County Assessor Records

The El Dorado County Recorders records were checked for environmental liens on APN 329-301-20-100, the parcel adjacent to State Route 49 (GeoSearch, 2018). No liens were recorded.

4.4 Physical Setting

The following sections provide information about the physical setting of the parcels obtained the regulatory agency records search in Appendix B. Although geotechnical information is not a required element of ASTM E1527-13 Phase I assessments, the regulatory records search includes some geotechnical information, as provided below.

Topography

The U.S. Geological Survey (USGS), 7.5 minute Placerville, California, topographic quadrangle map, 1973, depicts the subject property at an elevation ranging from about 1,610 feet above sea level at the southernmost end of the project site to about 1,845 feet above sea level at a hilltop near the center of the project site. Most of the project site is hilly and sloping to the south.

Geology and Hydrology

Surface soil types consist of very fine sandy loam to very rocky sandy loam, with placer diggings throughout the area (GeoSearch, 2018). The entire project site is underlain Mesozoic granitic rocks with rock exposures in various locations. No wells are located on the project site. The flow direction of groundwater likely mimics the ground surface flowing to the south.

Oil and Gas Fields

There are no recorded oil or natural gas wells located on or within ½ mile of the parcel (GeoSearch, 2018).

Flood Zone Designation

The parcel is not located within the 100-year flood zone (GeoSearch, 2018).

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SECTION 5.0
Site Reconnaissance

5.1 Methodology and Limiting Conditions

The purpose of the site reconnaissance was to identify visible hazardous materials on the subject property. Mr. Michael Burns of ESA conducted the site reconnaissance on January 10, 2019, to assess present conditions. Weather at the time of the site visit was clear. The site conditions discussed below are limited to readily apparent environmental conditions observed. ESA archaeologists Heidi Koenig and Robin Hoffman accompanied Mr. Burns on the site reconnaissance. Local resident Mike Roberts and Native American representatives Ramona Tripp-Verbeck, Joseph Valdez, and John McGregor also accompanied the group for some of the reconnaissance. Notable features and site conditions are identified on Figure 2 and discussed below. Photographs of features of interest are included in the text below.

5.2 General Site Setting

The project site consists of six parcels totaling about 144 acres. Access is from State Route 49 (also referred to as Main Street or Pleasant Valley Road) and a paved section of Faith Lane that extends south to unpaved roads and footpaths further south into and throughout the project site. A stream drainage flows south along the eastern side of the project site and various drainages are present throughout the site, all flowing generally south.

5.3 Site Observations

The project site consists mostly of conifer, oak, and brush forest, and some open grassy areas. The majority of the project site has a highly disturbed topography from placer mining activities in the late 1800s and defunct development efforts during the 1980s. The site reconnaissance observations discussed below are from the north to the south, with items of interest noted on Figure 2.

The northernmost portion of the project site consists of the paved portion of Faith Lane (APN 054-402-18) that extends from State Route 49 south into the project site. The road extends south to a locked gate and an unpaved road section further south, as shown in the photographs below. The Diamond Village shopping center is along the east side of the paved road section. This shopping center consists of various commercial retail outlets; no industrial or manufacturing facilities were observed. Deb's Frosty, a fast food outlet, is located along the west side of Faith Lane. Hazardous materials use for these commercial facilities would be limited to small household quantities of cleaning solutions. A buried sewer line is located under Faith Lane. No RECs were observed.





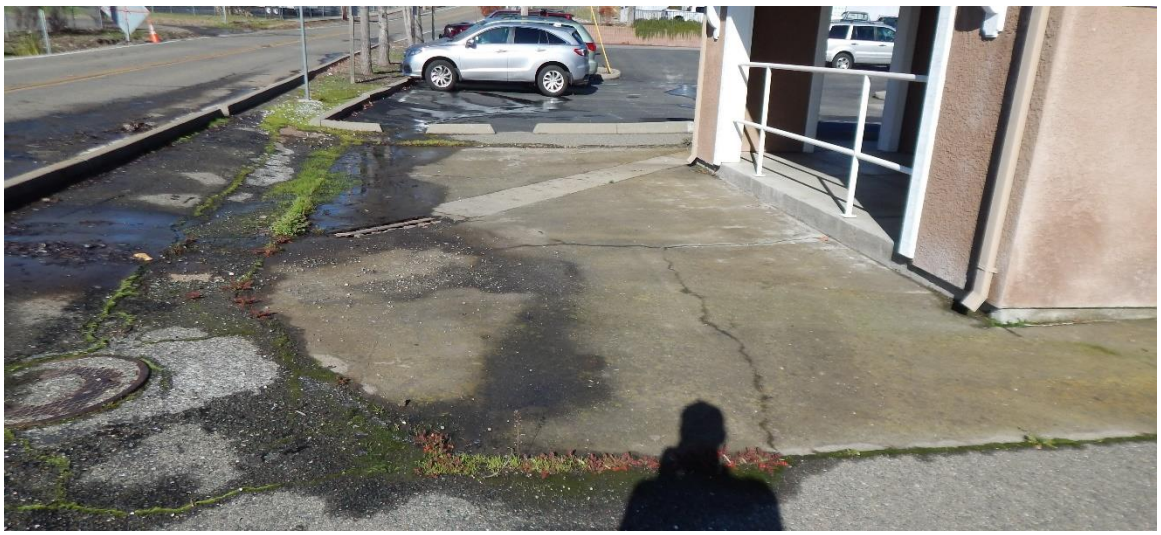




As discussed above in the regulatory records search, a former service station was located at 493 Main Street (State Route 49), north and across the highway from the project site (see Figure 2). The photographs below show the existing building, built in 1930 but since modified, which does not have the appearance of a former service station. The USTs were likely near the street. The bottom photograph below shows a concrete area along the west side of the building that may have possibly been the location of the former USTs, but this is speculation. Otherwise, there were no distinct indications of the UST locations.







The El Dorado Irrigation District sewer lift station is shown in the photographs below. No staining was observed on the concrete pads or the surrounding soil.







The photographs below show a former mine adit, now filled in with soil (see Figure 2). One small section of railroad track rail was observed, likely used to stabilize the opening. No mining equipment or materials were observed.







The body of a flipped over 1968 Chevrolet Camaro was observed at the location shown on Figure 2. The engine and transmission had been removed, along with the fuel, oil, and lubricants within those parts. The fuel tank was still present. However, the fueling port was open, indicating that any gasoline left in the tank would have evaporated away long ago. No stressed vegetation was observed.







The northern portion of the project site is free of trash and discarded debris. As the site reconnaissance proceeded further south of the mine adit into the more heavily forested portions southern portion of the project site, the observations of trash increased. The photographs below show trash at the green oval location shown on Figure 2. The trash at this and other locations consisted of household trash, furniture and bedding, tires, a water heater, and other debris. Various discarded small containers of household-size cleaning solutions, motor oil, and pesticides were observed; all were examined and found to be empty. Therefore, the presence of the trash and debris is considered a *de minimus* condition because the materials could be disposed of at any municipal (Class III non-hazardous waste) landfill.







Miscellaneous individual items are scattered throughout the southern portion of the project site, including pieces of furniture, bedding, a refrigerator, containers, and other items, as shown in the photographs below. As previously noted, these are considered *de minimus* conditions since the materials could be recycled of disposed at any municipal landfill.



5.4 Results of Site Reconnaissance

No evidence of discolored or stained pavement, soil, or water; stressed vegetation; above ground or underground storage tanks; pits; or lagoons were observed at the project site. Trash and debris were observed in scattered locations throughout the southern portion of the project site. However, the trash and debris are considered a *de minimus* condition because the materials can readily be recycled or disposed of at any municipal landfill. No RECs were observed.

SECTION 6.0
Interviews and User Provided Information

The following sections highlight information provided during interviews conducted for the project. Interviews included contacting individuals familiar with the subject property and knowledgeable of the subject parcel's historic and existing conditions relative to hazardous materials. The objective of the interview process is to obtain additional information regarding the history and current uses of the subject parcel. Much of the information acquired has been incorporated into various sections of this report.

6.1 Interview with Current Property Owner

Mr. Kevin Sweeney, the developer/owner was contacted and interviewed using the form provided in Appendix C. Mr. Sweeney has been associated with the property for about 20 years. He stated there are no known hazardous materials or environmental issues known to him. He is aware that one or more development projects prior to his time were considered but none of those project advanced beyond initial grading stages.

6.2 Interview with Local Resident

Mr. Mike Robert, a long-time local resident and amateur historian, provided information during the site reconnaissance. He could not recall a service station being located at 493 Main Street (now Pleasant Valley Road and State Route 49), north and across the highway from the project site.

SECTION 7.0
Findings and Opinions

7.1 Findings and Opinions

ESA has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Standard Practice E1527-13. Any exceptions to, or deletions from, this practice are described in the Scope of Services and Limitations and Exceptions sections of this report. Based only on the information reviewed and described in this report, a site reconnaissance of the parcel, and interviews, this assessment has noted the following in connection with the project site:

- With the exception of the sewer lift station, the project site was not identified as a location of soil or groundwater contamination on any of the databases that were searched.
- There is one sewer lift station operating on the project site that appears to be good working order with no visible environmental issues.
- There is no indication that previous use as a placer mining operation resulted in contamination to the parcel. No mining equipment was observed. The reworking of the surface topography suggests all mining was conducted using placer mining techniques where the gold was separated using water and gravity.
- The site reconnaissance observed trash and debris scattered throughout the southern portion of the project site. However, the discarded trash and debris is considered a *de minimus* condition because the materials can readily be recycled or disposed of at any municipal (Class III non-hazardous waste) landfill.

This assessment has identified one REC adjacent to the project site:

- One former service station was previously located at 493 Main Street (now Pleasant Valley Road and State Route 49), about 250 feet northeast of the northernmost part of the project site. Two gasoline USTs were removed in 1992 and the Regional Water Quality Control Board (RWQCB) issued a No Further Action (NFA) letter in 1996. However, the NFA letter states that contaminated soil and groundwater are present along the south side of the former service station site extending to beneath State Route 49 and toward the project site. It is unknown whether the contamination extends to beneath the project site. **This is considered an REC because excavation for the project close to State Route 49 may encounter contaminated soil and groundwater.**

7.2 Data Gaps

ESA attempted to obtain reasonably ascertainable information regarding the subject property and their surrounding environs. There were no data gaps identified that could affect the identification of RECs, HRECs, or CRECs.

SECTION 8.0
Report Authors and Qualifications

8.1 Report Authors and Signatures

This section includes qualification statements of the environmental professionals responsible for conducting the Phase I assessment and preparing this report.

Mr. Michael Burns, PG, CEG, CHG, of ESA conducted the data review for the campground, conducted the site reconnaissance, and prepared the Phase I Environmental Site Assessment report. Mr. Burns has over 30 years of experience in environmental site investigations, characterizations, and assessments, including Phase I Environmental Site Assessments.

The work conducted and the report written by Mr. Burns was reviewed by Mr. Luke Evans. Mr. Evans has 20 years of experience in environmental site investigations, characterizations, and assessments, including Phase I Environmental Site Assessments.

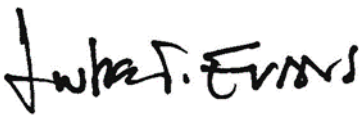
Mr. Burns declares that, to the best of his professional knowledge and belief, he meets the definition of Environmental Professional as defined in 40 CFR §312.10. Mr. Evans declares that, to the best of his professional knowledge and belief, he meets the definition of Environmental Professional as defined in 40 CFR §312.10.

Mr. Burns has the specific qualifications based on education, training, and experience to assess a parcel of the nature, history, and setting of this parcel. With the assistance of Mr. Evans, he has developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Principal Analyst/Reviewer: 

April 3, 2019

Michael G. Burns, PG #4532, CEG #1846, CHG #280

Senior Reviewer: 

April 3, 2019

Luke Evans, Program Manager

SECTION 9.0
References

ASTM, 2013, E1527-13 *Standard Practice for Environmental Site Assessments: Phase 1 Environmental Assessment Process*

El Dorado County Online Permits, 2019, website check for permits and permit violations, February 2

GeoSearch, 2018, *Radius Report, Target Property: Stonehenge Springs, Faith Lane, Diamond Springs, El Dorado County, California,* December 7

Snoke, 1984, *Archaeological Reconnaissance of the Missouri Flat-Diamond Springs Redevelopment Project.* NCIC Ref. # 4258. Confidential cultural resources report on file at the North Central Information Center, California State University, Sacramento.

Youngdahl Consulting Group, 2018, *Western El Dorado Recovery Material Facility, 4100 Throwita Way, Diamond Springs, El Dorado County, California, Third Quarter 2018 Groundwater Sampling Report*, September 28

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APPENDIX A

Regulatory Records Database Report

GeoSearch
On time. On target. In touch.™

Radius Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269577
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Unlocatable Report . . . . . See Attachment

Zip Report . . . . . See Attachment

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR ï¿½312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR ï¿½312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers And independent contractors cannot be held liable For actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.

Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)
1,761 feet above sea level

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCA	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR09	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR09	0	0	0.1250
FEMA OWNED STORAGE TANKS	FEMAUST	0	0	0.2500
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	1	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		1	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR09	0	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
FACILITY REGISTRY SYSTEM	FRSCA	3	0	TP/AP
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR09	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR09	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR09	0	0	TP/AP
SEMS LIEN ON PROPERTY	SEMSLIENS	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
INTEGRATED COMPLIANCE INFORMATION SYSTEM DRYCLEANERS	ICISCLEANERS	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	3	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		6	0	

Database Summary

STATE (CA) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
DTSC DEED RESTRICTIONS	DTSCDR	0	0	TP/AP
ABOVE GROUND STORAGE TANKS	ABST	0	0	0.2500
ABOVEGROUND STORAGE TANKS PRIOR TO JANUARY 2008	AST2007	0	0	0.2500
HISTORICAL UNDERGROUND STORAGE TANKS	HISTUST	1	1	0.2500
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	1	1	0.2500
UNDERGROUND STORAGE TANKS	USTCUPA	1	0	0.2500
BROWNFIELD SITES	BF	0	0	0.5000
CALSITES DATABASE	CALSITES	2	0	0.5000
GEOTRACKER CLEANUP SITES	CLEANUPSITES	4	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS	LUST	2	0	0.5000
SOLID WASTE INFORMATION SYSTEM SITES	SWIS	3	0	0.5000
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.5000
ENVIROSTOR CLEANUP SITES	ENVIROSTOR	7	0	1.0000
ENVIROSTOR PERMITTED AND CORRECTIVE ACTION SITES	ENVIROSTORPCA	0	0	1.0000

SUB-TOTAL		21	2	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	3	0	TP/AP
CLANDESTINE DRUG LABS	CDL	1	0	TP/AP
EMISSIONS INVENTORY DATA	EMI	0	0	TP/AP
HAZARDOUS WASTE TANNER SUMMARY	HWTS	2	0	TP/AP
LAND DISPOSAL SITES	LDS	0	0	TP/AP
MILITARY CLEANUP SITES	MCS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FACILITIES	NPDES	0	0	TP/AP
RECORDED ENVIRONMENTAL CLEANUP LIENS	LIENS	0	0	TP/AP
CALIFORNIA MEDICAL WASTE MANAGEMENT PROGRAM FACILITY LIST	MWMP	0	0	0.2500
DTSC REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.2500
DRY CLEANER FACILITIES	CLEANER	0	0	0.2500
MINES LISTING	MINES	0	0	0.2500

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.2500
CORTESE LIST	CORTESE	0	0	0.5000
EXPEDITED REMOVAL ACTION PROGRAM SITES	ERAP	0	0	0.5000
HISTORICAL CORTESE LIST	HISTCORTESE	3	0	0.5000
LISTING OF CERTIFIED DROPOFF, COLLECTION, AND COMMUNITY SERVICE PROGRAMS	DROP	3	1	0.5000
LISTING OF CERTIFIED PROCESSORS	PROC	1	0	0.5000
NO FURTHER ACTION DETERMINATION	NFA	1	0	0.5000
RECYCLING CENTERS	SWRCY	10	0	0.5000
REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	1	0	0.5000
SITES NEEDING FURTHER EVALUATION	NFE	0	0	0.5000
WASTE MANAGEMENT UNIT DATABASE	WMUDS	0	0	0.5000
TOXIC PITS CLEANUP ACT SITES	TOXPITS	0	0	1.0000

SUB-TOTAL		25	1	

Database Summary

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR09	0	0	0.2500
ILLEGAL DUMP SITES ON THE TORRES MARTINEZ RESERVATION	TORRESDUMPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR09	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		53	3	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR09	0.0200	0	NS	NS	NS	NS	NS	0
ERNSCA	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSCA	0.0200	3	NS	NS	NS	NS	NS	3
HMIRSR09	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR09	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR09	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SEMSLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
RCRANGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
FEMAUST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
HISTPST	0.2500	0	0	0	NS	NS	NS	0
ICISCLEANERS	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	1	2	0	NS	NS	NS	3
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**1**	**0**	**NS**	**NS**	**1**
SMCRA	0.5000	0	0	0	0	NS	NS	0
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		4	2	1	0	0	0	7

Database Radius Summary

STATE (CA) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.0200	1	NS	NS	NS	NS	NS	1
CHMIRS	0.0200	3	NS	NS	NS	NS	NS	3
DTSCDR	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
EMI	0.0200	0	NS	NS	NS	NS	NS	0
HWTS	0.0200	2	NS	NS	NS	NS	NS	2
LDS	0.0200	0	NS	NS	NS	NS	NS	0
LIENS	0.0200	0	NS	NS	NS	NS	NS	0
MCS	0.0200	0	NS	NS	NS	NS	NS	0
NPDES	0.0200	0	NS	NS	NS	NS	NS	0
ABST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
AST2007	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
CLEANER	0.2500	0	0	0	NS	NS	NS	0
DTSCHWT	0.2500	0	0	0	NS	NS	NS	0
HISTUST	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
MINES	0.2500	0	0	0	NS	NS	NS	0
MWMP	0.2500	0	0	0	NS	NS	NS	0
SLIC	0.2500	0	0	0	NS	NS	NS	0
SWEEPS	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
USTCUPA	**0.2500**	**0**	**0**	**1**	**NS**	**NS**	**NS**	**1**
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CALSITES	**0.5000**	**0**	**0**	**0**	**2**	**NS**	**NS**	**2**
CLEANUPSITES	**0.5000**	**0**	**1**	**0**	**3**	**NS**	**NS**	**4**
CORTESE	0.5000	0	0	0	0	NS	NS	0
DROP	0.5000	0	0	0	3	NS	NS	3
ERAP	0.5000	0	0	0	0	NS	NS	0
HISTCORTESE	0.5000	0	1	0	2	NS	NS	3
LUST	**0.5000**	**0**	**1**	**0**	**1**	**NS**	**NS**	**2**
NFA	0.5000	0	0	0	1	NS	NS	1
NFE	0.5000	0	0	0	0	NS	NS	0
PROC	0.5000	0	0	0	1	NS	NS	1
REF	0.5000	0	0	0	1	NS	NS	1
SWIS	**0.5000**	**0**	**0**	**0**	**3**	**NS**	**NS**	**3**
SWRCY	0.5000	0	0	0	10	NS	NS	10
VCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
WMUDS	0.5000	0	0	0	0	NS	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
ENVIROSTOR	**1.0000**	**0**	**0**	**0**	**3**	**4**	**NS**	**7**
ENVIROSTORPCA	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
TOXPITS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		6	3	3	30	4	0	46

Database Radius Summary

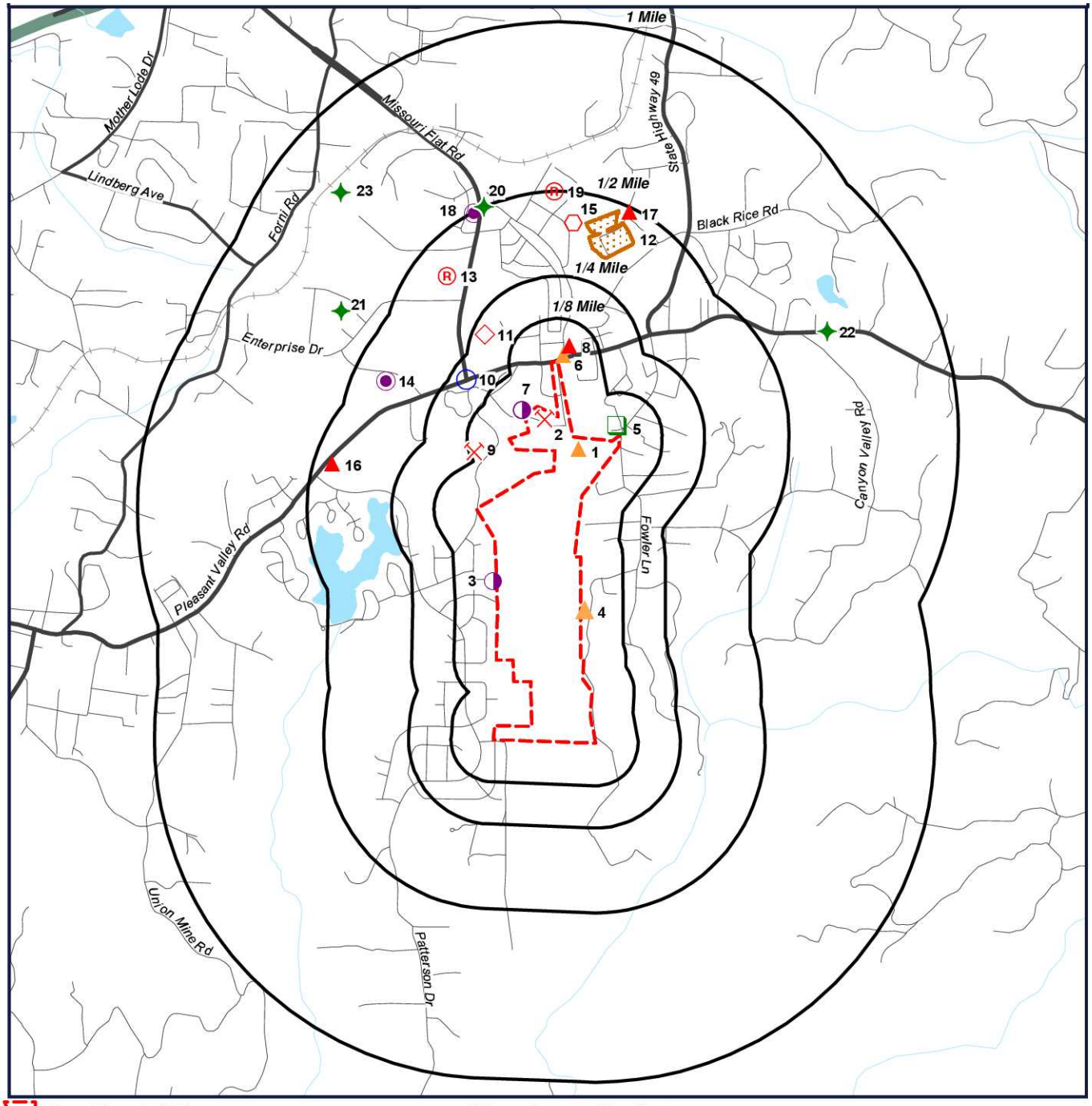
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR09	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR09	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
TORRESDUMPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		10	5	4	30	4	0	53

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

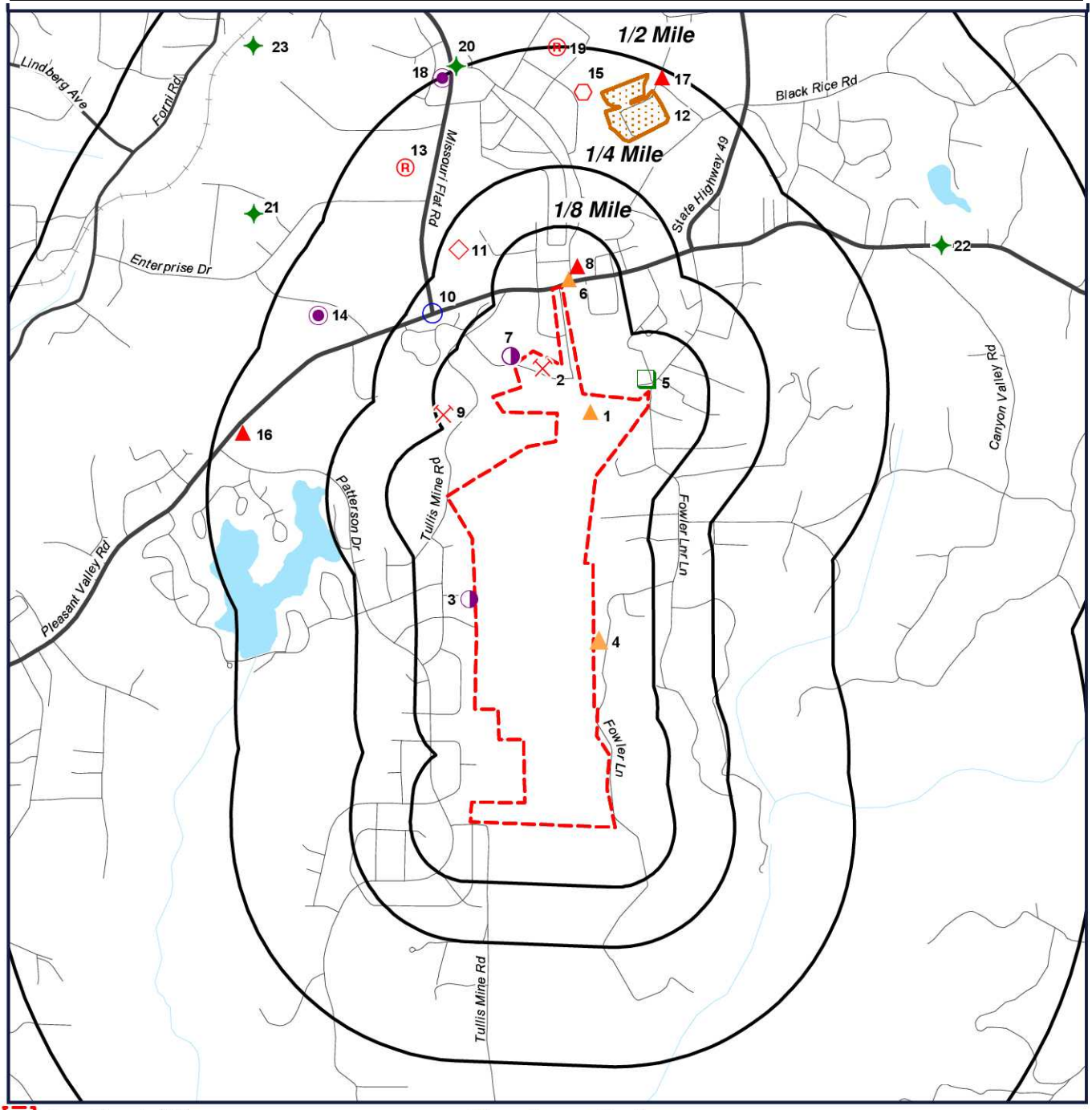
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W
E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

[Click here to access Satellite view]

Radius Map 2



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

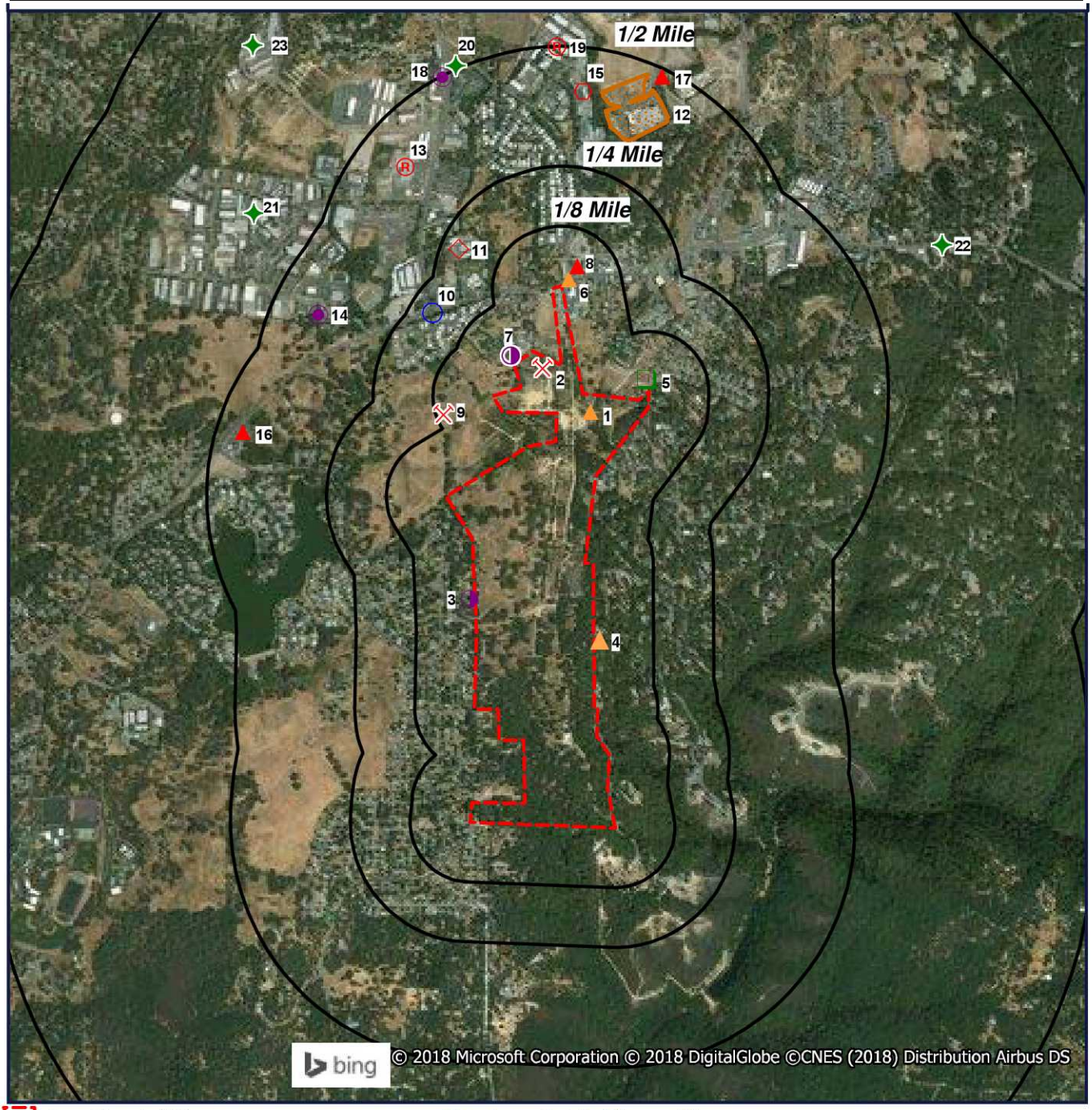
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 850' 1700' 2550'
SCALE: 1" = 1700'

[Click here to access Satellite view]

Ortho Map



Target Property (TP)
CHMIRS
MRDS
HWTS
FRSCA
CLEANUPSITES
SEMSARCH
USTCUPA
SWIS
SWRCY
PROC
DROP
CLEANUPSITES
SWRCY
CALSITES
HISTCORTESE
ENVIROSTOR

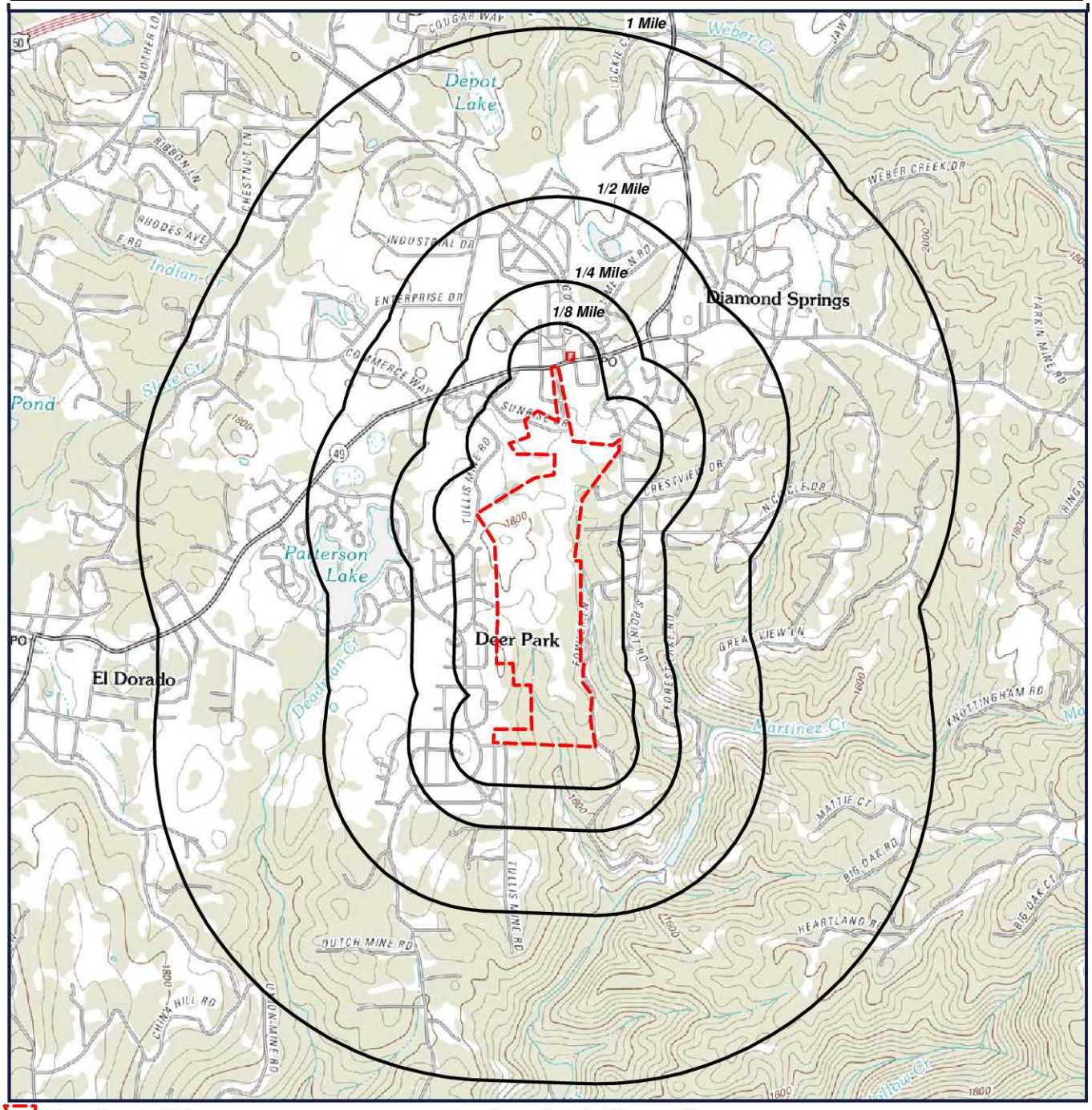
Quadrangle(s): Placerville
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 850' 1700' 2550'
SCALE: 1" = 1700'

Click here to access Satellite view

Topographic Map



Target Property (TP)

Quadrangle(s): Placerville
Source: USGS, 03/06/2012
Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

[Click here to access Satellite view]

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	CHMIRS	005732	Lower (1,739 ft.)	TP		DEBS FROSTY LIFT STATION END OF FAITH LANE, DIAMOND SPRINGS, CA 95619	22
1	FRSCA	110065851242	Lower (1,739 ft.)	TP	DEB'S FROSTY LIFT STATION	FAITH LANE ESNA 0.25 MI. S/HWY 49, DIAMOND SPRINGS, CA 95619	23
2	MRDS	10139067	Higher (1,763 ft.)	TP	PHILLIP N. HUFFT CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	24
3	HWTS	CAC002801219	Higher (1,778 ft.)	0.012 mi. W (63 ft.)	MARK MORGAN	210 JUSTINE CT, DIAMOND SPRINGS, CA 95619	25
4	CDL	200202096	Lower (1,690 ft.)	0.012 mi. E (63 ft.)		473 FOWLER LANE, DIAMOND SPRINGS, CA 95619	26
4	CHMIRS	04-1482	Lower (1,690 ft.)	0.012 mi. E (63 ft.)		473 FOWLER LANE, DIAMOND SPRINGS, CA 95667	27
5	FRSCA	110064896171	Lower (1,753 ft.)	0.018 mi. N (95 ft.)	DIAMOND VILLAS SENIOR HOUSING	PANTHER LANE, DIAMOND SPRINGS, CA 95619	28
6	CHMIRS	08-5950	Higher (1,786 ft.)	0.019 mi. ENE (100 ft.)		CHINA GARDEN AT PLEASANT VALLEY RD., DIAMOND SPRINGS, CA	29
7	FRSCA	110066033820	Higher (1,767 ft.)	0.019 mi. NW (100 ft.)	WARD'S AUTOMOTIVE	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	30
7	HWTS	CAL000167531	Higher (1,767 ft.)	0.019 mi. NW (100 ft.)	WARDS AUTOMOTIVE INC	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	31
8	***CLEANUPSITES***	***T0601700047***	***Higher (1,786 ft.)***	***0.05 mi. NE (264 ft.)***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***32***
8	HISTCORTESE	090065COR	Higher (1,786 ft.)	0.05 mi. NE (264 ft.)	FORMER SS	493 MAIN, DIAMOND SPRINGS, CA 95619	33
8	***LUST***	***T0601700047***	***Higher (1,786 ft.)***	***0.05 mi. NE (264 ft.)***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***34***
9	MRDS	10029926	Lower (1,760 ft.)	0.107 mi. WSW (565 ft.)	ROBERT NELSON CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	35
9	MRDS	10029927	Lower (1,760 ft.)	0.107 mi. WSW (565 ft.)	WHEELOCK	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	36
10	***SEMSARCH***	***CAD980637417***	***Higher (1,762 ft.)***	***0.201 mi. WNW (1061 ft.)***	***OLD CALDOR LUMBER CO YD***	***HWY 49 & FLAT RD, DIAMOND SPRINGS, CA 95619***	***37***
11	***HISTUST***	***0002344F***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619***	***38***
11	***SWEEPS***	***A09-000-46253***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT RD, DIAMOND SPRINGS, CA 95619***	***42***
11	***USTCUPA***	***187573130***	***Higher (1,799 ft.)***	***0.211 mi. WNW (1114 ft.)***	***EDUHSD TRANSPORTATION***	***4675 MISSOURI FLAT RD, PLACERVILLE, CA 95667***	***43***
12	***CLEANUPSITES***	***T10000009244***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WASTE CONNECTIONS***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***44***
12	DROP	CP0674	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	MATERIAL RECOVERY FACILITY	4100 THROWITA WAY, PLACERVILLE, CA 95667	46

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
12	DROP	CP0880	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	47
12	DROP	CP0961	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	SEI SOLID WASTE	4100 THROWITA WAY, PLACERVILLE, CA 95667	48
12	PROC	PR0439	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	49
12	***SWIS***	***09-AA-0004SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WESTERN EL DORADO RECOVERY SYSTEMS MRF***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***50***
12	***SWIS***	***09-AA-0006SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WEDRS-GREEN WASTE RECYCLING CENTER***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***51***
12	***SWIS***	***09-AA-0007SWIS***	***Higher (1,812 ft.)***	***0.333 mi. NNE (1758 ft.)***	***WEDRS- CDI RECOVETY OPERATION (MVCDI)***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***52***
12	SWRCY	CP0880	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	53
12	SWRCY	CS1171	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	54
12	SWRCY	CS1234	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	55
12	SWRCY	CS1235	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	56
12	SWRCY	CS1236	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	57
12	SWRCY	CS19394.001	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	58
12	SWRCY	PR0439	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	59
12	SWRCY	RC10531	Higher (1,812 ft.)	0.333 mi. NNE (1758 ft.)	WESTERN EL DORADO RECOVERY SYSTEMS	4100 THROWITA WY, PLACERVILLE, CA 95667	60
13	SWRCY	RC10654	Higher (1,816 ft.)	0.396 mi. WNW (2091 ft.)	MISSOURI FLAT RECYCLE CENTER	4600 MISSOURI FLAT RD, PLACERVILLE, CA 95667	61
14	***CALSITES***	***09750002***	***Higher (1,802 ft.)***	***0.401 mi. WNW (2117 ft.)***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***62***
14	***ENVIROSTOR***	***09750002***	***Higher (1,802 ft.)***	***0.401 mi. WNW (2117 ft.)***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***63***
14	REF	9750002	Higher (1,802 ft.)	0.401 mi. WNW (2117 ft.)	FOOTHILL AUTO REPAIR	6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619	64

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
15	HISTCORTESE	6A189101N25C OR	Higher (1,801 ft.)	0.403 mi. N (2128 ft.)	GUSTAFSON D M & PATRICI	3655 CHUCKWAGON, PLACERVILLE, CA 95667	65
16	***CLEANUPSITES***	***T0601700077***	***Lower (1,747 ft.)***	***0.443 mi. WNW (2339 ft.)***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***66***
16	HISTCORTESE	090096COR	Lower (1,747 ft.)	0.443 mi. WNW (2339 ft.)	STEVE'S CHEAPER	130 PLEASANT VALLEY, DIAMOND SPRINGS, CA 95619	69
16	***LUST***	***T0601700077***	***Lower (1,747 ft.)***	***0.443 mi. WNW (2339 ft.)***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***70***
17	***CLEANUPSITES***	***T10000010458***	***Higher (1,819 ft.)***	***0.481 mi. NNE (2540 ft.)***	***ABEL TRUST***	***4061 LIME PLANT ROAD, DIAMOND SPRINGS, CA 95667***	***71***
18	***CALSITES***	***09340001***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***73***
18	***ENVIROSTOR***	***09340001***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***74***
18	***ENVIROSTOR***	***71003046***	***Higher (1,817 ft.)***	***0.497 mi. NNW (2624 ft.)***	***CELEBRITY, INC.***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***75***
18	NFA	71003046	Higher (1,817 ft.)	0.497 mi. NNW (2624 ft.)	CELEBRITY, INC.	4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667	76
19	SWRCY	RC4019	Higher (1,812 ft.)	0.498 mi. N (2629 ft.)	E M RECYCLING	4040 #A-2 STAGE CT, PLACERVILLE, CA 95667	77
20	***ENVIROSTOR***	***09500006***	***Higher (1,817 ft.)***	***0.522 mi. NNW (2756 ft.)***	***TETERS AUTO WRECKERS***	***4487 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***78***
21	***ENVIROSTOR***	***71003697***	***Lower (1,757 ft.)***	***0.641 mi. WNW (3384 ft.)***	***CELEBRITY, INC.***	***6650 MERCHANDISE WAY, DIAMOND SPRINGS, CA 95619***	***79***
22	***ENVIROSTOR***	***09280001***	***Higher (1,848 ft.)***	***0.683 mi. ENE (3606 ft.)***	***OXYGEN SERVICE AND SUPPLY COMPANY***	***13 CHINA GARDEN ROAD, DIAMOND SPRINGS, CA 95619***	***80***
23	***ENVIROSTOR***	***09730001***	***Higher (1,794 ft.)***	***0.818 mi. WNW (4319 ft.)***	***OLD CALDOR LUMBER COMPANY YARD***	***180 INDUSTRIAL DRIVE, DIAMOND SPRINGS, CA 95619***	***81***

Elevation Summary

Elevations are collected from the USGS 3D Elevation Program 1/3 arc-second (approximately 10 meters) layer hosted at the NGTOC. .

Target Property Elevation: 1761 ft.

*NOTE: Standard environmental records are displayed in **bold**.*

EQUAL/HIGHER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
2	MRDS	1,763 ft.	PHILLIP N. HUFFT CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	24
3	HWTS	1,778 ft.	MARK MORGAN	210 JUSTINE CT, DIAMOND SPRINGS, CA 95619	25
6	CHMIRS	1,786 ft.		CHINA GARDEN AT PLEASANT VALLEY RD., DIAMOND SPRINGS, CA	29
7	FRSCA	1,767 ft.	WARD'S AUTOMOTIVE	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	30
7	HWTS	1,767 ft.	WARDS AUTOMOTIVE INC	2189 SUNRISE DR, DIAMOND SPRINGS, CA 95619	31
8	***CLEANUPSITES***	***1,786 ft.***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***32***
8	HISTCORTESE	1,786 ft.	FORMER SS	493 MAIN, DIAMOND SPRINGS, CA 95619	33
8	***LUST***	***1,786 ft.***	***FORMER SS***	***493 MAIN ST, DIAMOND SPRINGS, CA 95619***	***34***
10	***SEMSARCH***	***1,762 ft.***	***OLD CALDOR LUMBER CO YD***	***HWY 49 & FLAT RD, DIAMOND SPRINGS, CA 95619***	***37***
11	***HISTUST***	***1,799 ft.***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619***	***38***
11	***SWEEPS***	***1,799 ft.***	***EL DORADO UNION HIGH SCHOOL DI***	***4675 MISSOURI FLAT RD, DIAMOND SPRINGS, CA 95619***	***42***
11	***USTCUPA***	***1,799 ft.***	***EDUHSD TRANSPORTATION***	***4675 MISSOURI FLAT RD, PLACERVILLE, CA 95667***	***43***
12	***CLEANUPSITES***	***1,812 ft.***	***WASTE CONNECTIONS***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***44***
12	DROP	1,812 ft.	MATERIAL RECOVERY FACILITY	4100 THROWITA WAY, PLACERVILLE, CA 95667	46
12	DROP	1,812 ft.	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	47
12	DROP	1,812 ft.	SEI SOLID WASTE	4100 THROWITA WAY, PLACERVILLE, CA 95667	48
12	PROC	1,812 ft.	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	49
12	***SWIS***	***1,812 ft.***	***WESTERN EL DORADO RECOVERY SYSTEMS MRF***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***50***
12	***SWIS***	***1,812 ft.***	***WEDRS-GREEN WASTE RECYCLING CENTER***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***51***
12	***SWIS***	***1,812 ft.***	***WEDRS- CDI RECOVETY OPERATION (MVCDI)***	***4100 THROWITA WAY, PLACERVILLE, CA 95667***	***52***
12	SWRCY	1,812 ft.	EL DORADO DISPOSAL SERVICE MRF	4100 THROWITA WAY, PLACERVILLE, CA 95667	53
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	54

Elevation Summary

Map ID#	Database Name	Elevation	Site Name	Address	Page #
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	55
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	56
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	57
12	SWRCY	1,812 ft.	WASTE CONNECTIONS OF CALIFORNIA INC	4100 THROWITA WAY, PLACERVILLE, CA 95667	58
12	SWRCY	1,812 ft.	EL DORADO DISPOSAL SERVICE	4100 THROWITA WAY, PLACERVILLE, CA 95667	59
12	SWRCY	1,812 ft.	WESTERN EL DORADO RECOVERY SYSTEMS	4100 THROWITA WY, PLACERVILLE, CA 95667	60
13	SWRCY	1,816 ft.	MISSOURI FLAT RECYCLE CENTER	4600 MISSOURI FLAT RD, PLACERVILLE, CA 95667	61
14	***CALSITES***	***1,802 ft.***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***62***
14	***ENVIROSTOR***	***1,802 ft.***	***FOOTHILL AUTO REPAIR***	***6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619***	***63***
14	REF	1,802 ft.	FOOTHILL AUTO REPAIR	6566-C COMMERCE WAY, DIAMOND SPRINGS, CA 95619	64
15	HISTCORTESE	1,801 ft.	GUSTAFSON D M & PATRICI	3655 CHUCKWAGON, PLACERVILLE, CA 95667	65
17	***CLEANUPSITES***	***1,819 ft.***	***ABEL TRUST***	***4061 LIME PLANT ROAD, DIAMOND SPRINGS, CA 95667***	***71***
18	***CALSITES***	***1,817 ft.***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***73***
18	***ENVIROSTOR***	***1,817 ft.***	***CELEBRITY PLATING***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***74***
18	***ENVIROSTOR***	***1,817 ft.***	***CELEBRITY, INC.***	***4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***75***
18	NFA	1,817 ft.	CELEBRITY, INC.	4502 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667	76
19	SWRCY	1,812 ft.	E M RECYCLING	4040 #A-2 STAGE CT, PLACERVILLE, CA 95667	77
20	***ENVIROSTOR***	***1,817 ft.***	***TETERS AUTO WRECKERS***	***4487 MISSOURI FLAT ROAD, PLACERVILLE, CA 95667***	***78***
22	***ENVIROSTOR***	***1,848 ft.***	***OXYGEN SERVICE AND SUPPLY COMPANY***	***13 CHINA GARDEN ROAD, DIAMOND SPRINGS, CA 95619***	***80***
23	***ENVIROSTOR***	***1,794 ft.***	***OLD CALDOR LUMBER COMPANY YARD***	***180 INDUSTRIAL DRIVE, DIAMOND SPRINGS, CA 95619***	***81***

LOWER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
1	CHMIRS	1,739 ft.		DEBS FROSTY LIFT STATION END OF FAITH LANE, DIAMOND SPRINGS, CA 95619	22
1	FRSCA	1,739 ft.	DEB'S FROSTY LIFT STATION	FAITH LANE ESNA 0.25 MI. S/HWY 49, DIAMOND SPRINGS, CA 95619	23
4	CDL	1,690 ft.		473 FOWLER LANE, DIAMOND SPRINGS, CA 95619	26

Elevation Summary

Map ID#	Database Name	Elevation	Site Name	Address	Page #
4	CHMIRS	1,690 ft.		473 FOWLER LANE, DIAMOND SPRINGS, CA 95667	27
5	FRSCA	1,753 ft.	DIAMOND VILLAS SENIOR HOUSING	PANTHER LANE, DIAMOND SPRINGS, CA 95619	28
9	MRDS	1,760 ft.	ROBERT NELSON CLAIM	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	35
9	MRDS	1,760 ft.	WHEELOCK	EL DORADO COUNTY, DIAMOND SPRINGS, CA 95619	36
16	***CLEANUPSITES***	***1,747 ft.***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***66***
16	HISTCORTESE	1,747 ft.	STEVE'S CHEAPER	130 PLEASANT VALLEY, DIAMOND SPRINGS, CA 95619	69
16	***LUST***	***1,747 ft.***	***STEVE'S CHEAPER***	***130 PLEASANT VALLEY RD, DIAMOND SPRINGS, CA 95619***	***70***
21	***ENVIROSTOR***	***1,757 ft.***	***CELEBRITY, INC.***	***6650 MERCHANDISE WAY, DIAMOND SPRINGS, CA 95619***	***79***

California Hazardous Material Incident Report System (CHMIRS)

MAP ID# 1

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,739 ft. (Lower than TP)

INCIDENT INFORMATION

CONTROL #: **005732**
NOTIFIED: **12/16/94**
AGENCY: **EL DORADO IRRIGATION DISTRICT**
ADMINISTRATION: **NOT REPORTED**
INCIDENT LOCATION: **DEBS FROSTY LIFT STATION END OF FAITH LANE**
DIAMOND SPRINGS, CA 95619
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **RAW SEWAGE**
QUANTITY: **NOT REPORTED**
TYPE: **ONS**

INCIDENT DESCRIPTION

FAILURE AT LIFT STATION - UNKNOWN CAUSE UNDER INVESTIGATION WATER INVOLVEMENT UNKNOWN AT THIS TIME SPILL WENT TO CULVERT

CONTAINED: **NOT REPORTED**
WATER INVOLVED / WATERWAY: **NO / NOT REPORTED**
DATE AND TIME: **1200/16DEC**
SITE: **NOT REPORTED**
INJURIES: **NO**
FATALITIES: **NO**
EVACUATIONS: **NO**
CLEANUP BY: **EID**

Back to Report Summary

Facility Registry System (FRSCA)

MAP ID# 1

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,739 ft. (Lower than TP)

FACILITY INFORMATION

REGISTRY ID: **110065851242**

NAME: **DEB'S FROSTY LIFT STATION**

LOCATION ADDRESS: **FAITH LANE ESNA 0.25 MI. S/HWY 49**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

DEB'S FROSTY LIFT STATION

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

4952 - SEWERAGE SYSTEMS

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

Back to Report Summary

Mineral Resource Data System (MRDS)

MAP ID# 2

Distance from Property: 0 mi. (0 ft.) X
Elevation: 1,763 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10139067**
DEP ID: **10139067**
MINE NAME: **PHILLIP N. HUFFT CLAIM**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **UNKNOWN**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **PHILLIP N. HUFFT CLAIM**
STATUS: **CURRENT**

Back to Report Summary

Hazardous Waste Tanner Summary (HWTS)

MAP ID# 3

Distance from Property: 0.012 mi. (63 ft.) W
Elevation: 1,778 ft. (Higher than TP)

SITE INFORMATION

EPA ID: **CAC002801219**
NAME: **MARK MORGAN**
COUNTY: **NOT REPORTED**
ADDRESS: **210 JUSTINE CT**
DIAMOND SPRINGS, CA 95619-9318
FACILITY LINK: *Department of Toxic Substances Control*

CONTACT INFORMATION

CONTACT: **MARK MORGAN**
PHONE: **530-306-2485**
ADDRESS: **3218 EASTVIEW DR**
SHINGLE SPRINGS CA 956827109

MANIFEST SUMMARY INFORMATION

YEAR: **2015**
TSD ID: **CAD982042475**
GENERATOR COUNTY: **NOT REPORTED**
DISPOSAL COUNTY: **SOLANO**
WASTE CATEGORY: **ASBESTOS CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.23**
DISPOSAL METHOD: **LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)**

Back to Report Summary

Clandestine Drug Labs (CDL)

MAP ID# 4

Distance from Property: 0.012 mi. (63 ft.) E
Elevation: 1,690 ft. (Lower than TP)

SITE INFORMATION

GEOSEARCH ID: **200202096**

ID#: **2002-02-096**

ADDRESS: **473 FOWLER LANE**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

LAB TYPE: **ILLEGAL DRUG LAB - LOCATION WHERE AND ILLEGAL DRUG LAB WAS OPERATED OR DRUG LAB EQUIPMENT AND/OR MATERIALS WERE STORED**

Back to Report Summary

California Hazardous Material Incident Report System (CHMIRS)

MAP ID# 4

Distance from Property: 0.012 mi. (63 ft.) E
Elevation: 1,690 ft. (Lower than TP)

INCIDENT INFORMATION

CONTROL #: **04-1482**
NOTIFIED: **03/17/04**
AGENCY: **EL DORADO IRRIGATION DISTRICT**
ADMINISTRATION: **EL DORADO COUNTY ENVIRONMENTAL MGMT.**
INCIDENT LOCATION: **473 FOWLER LANE**
DIAMOND SPRINGS, CA 95667
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **POTABLE WATER**
QUANTITY: **1000**
TYPE: **GALS**

INCIDENT DESCRIPTION

TWO INCH LINE BREAK CAUSED THE SPILL. NOT USED FOR DRINKING OR RECREATION. THE WATER IS CHLORINATED.
CONTAINED: **YES**
WATER INVOLVED / WATERWAY: **NOT REPORTED / SEASONAL CREEK**
DATE AND TIME: **3/17/2004**
SITE: **RESIDENCE**
INJURIES: **0**
FATALITIES: **0**
EVACUATIONS: **0**
CLEANUP BY: **N/A**

Back to Report Summary

MAP ID# 5

Distance from Property: 0.018 mi. (95 ft.) N
Elevation: 1,753 ft. (Lower than TP)

FACILITY INFORMATION

REGISTRY ID: **110064896171**

NAME: **DIAMOND VILLAS SENIOR HOUSING**

LOCATION ADDRESS: **PANTHER LANE**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO COUNTY**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

DIAMOND VILLAS SENIOR HOUSING

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

1522 - GENERAL CONTRACTORS-RESIDENTIAL BUILDINGS, OTHER THAN SINGLE-FAMILY

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

Back to Report Summary

MAP ID# 6

Distance from Property: 0.019 mi. (100 ft.) ENE
Elevation: 1,786 ft. (Higher than TP)

INCIDENT INFORMATION

CONTROL #: **08-5950**
NOTIFIED: **08/15/08**
AGENCY: **EL DORADO IRRIGATION DIST.**
ADMINISTRATION: **EL DORADO COUNTY ENVIRONMENTAL MGMT.**
INCIDENT LOCATION: **CHINA GARDEN AT PLEASANT VALLEY RD.**
DIAMOND SPRINGS, CA
INCIDENT COUNTY: **EL DORADO**

SUBSTANCE INFORMATION

SUBSTANCE: **WASTE WATER**
QUANTITY: **300**
TYPE: **GAL(S)**

INCIDENT DESCRIPTION

THE WASTE WATER SPILLED INTO A DRAINAGE DITCH.
CONTAINED: **NO**
WATER INVOLVED / WATERWAY: **NO / NOT REPORTED**
DATE AND TIME: **8/15/2008**
SITE: **OTHER**
INJURIES: **0**
FATALITIES: **0**
EVACUATIONS: **0**
CLEANUP BY: **REPORTING PARTY**

Back to Report Summary

Facility Registry System (FRSCA)

MAP ID# 7

Distance from Property: 0.019 mi. (100 ft.) NW
Elevation: 1,767 ft. (Higher than TP)

FACILITY INFORMATION

REGISTRY ID: **110066033820**

NAME: **WARD'S AUTOMOTIVE**

LOCATION ADDRESS: **2189 SUNRISE DR**
DIAMOND SPRINGS, CA 95619

COUNTY: **EL DORADO**

EPA REGION: **09**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

WARD'S AUTOMOTIVE

PROGRAM/S LISTED FOR THIS FACILITY

CA-ENVIROVIEW - CA-ENVIROVIEW

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

NO SIC DATA REPORTED

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED

Back to Report Summary

Hazardous Waste Tanner Summary (HWTS)

MAP ID# 7

Distance from Property: 0.019 mi. (100 ft.) NW
Elevation: 1,767 ft. (Higher than TP)

SITE INFORMATION

EPA ID: **CAL000167531**
NAME: **WARDS AUTOMOTIVE INC**
COUNTY: **NOT REPORTED**
ADDRESS: **2189 SUNRISE DR**
DIAMOND SPRINGS, CA 95619
FACILITY LINK: *Department of Toxic Substances Control*

CONTACT INFORMATION

CONTACT: **WARDS AUTOMOTIVE INC**
PHONE: **NOT REPORTED**
ADDRESS: **NOT REPORTED**
NOT REPORTED NOT REPORTED

MANIFEST SUMMARY INFORMATION

YEAR: **1998**
TSD ID: **NVD982358483**
GENERATOR COUNTY: **EL DORADO**
DISPOSAL COUNTY: **UNKNOWN**
WASTE CATEGORY: **UNSPECIFIED OIL-CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.2418**
DISPOSAL METHOD: **RECYCLER**

YEAR: **1997**
TSD ID: **NVD982358483**
GENERATOR COUNTY: **EL DORADO**
DISPOSAL COUNTY: **UNKNOWN**
WASTE CATEGORY: **UNSPECIFIED OIL-CONTAINING WASTE**
AMOUNT DISPOSED(TONS): **0.3127**
DISPOSAL METHOD: **RECYCLER**

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MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700047**
URL LINK: CLICK HERE
BUSINESS NAME: **FORMER SS**
ADDRESS: **493 MAIN ST**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **90065**
STATUS: **COMPLETED - CASE CLOSED 06/22/1992**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
SOIL
SITE HISTORY:
NOT REPORTED

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
OTHER	**01/01/50**	**LEAK DISCOVERY**
OTHER	**01/01/50**	**LEAK REPORTED**
ENFORCEMENT	**11/13/1996**	**CLOSURE/NO FURTHER ACTION LETTER**
OTHER	**04/01/1992**	**LEAK REPORTED**
OTHER	**02/28/1992**	**LEAK DISCOVERY**

STATUS HISTORY

STATUS:	DATE:
COMPLETED - CASE CLOSED	**06/22/1992**
OPEN - SITE ASSESSMENT	**04/01/1992**
OPEN - CASE BEGIN DATE	**02/28/1992**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE #200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **PETER MINKEL**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **NOT REPORTED**
EMAIL: **PMINKEL@WATERBOARDS.CA.GOV**

Back to Report Summary

Historical Cortese List (HISTCORTESE)

MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **090065COR**
ID#: **090065**
NAME: **FORMER SS**
ADDRESS: **493 MAIN**
DIAMOND SPRINGS, CA 95619

Back to Report Summary

Leaking Underground Storage Tanks (LUST)

MAP ID# 8

Distance from Property: 0.05 mi. (264 ft.) NE
Elevation: 1,786 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700047**
URL LINK: CLICK HERE
BUSINESS NAME: **FORMER SS**
ADDRESS: **493 MAIN ST**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **090065**
STATUS: **06/22/1992**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
SOIL
SITE HISTORY:
NOT REPORTED

HISTORICAL FACILITY DETAILS

NO HISTORICAL DETAIL(S) INFORMATION REPORTED FOR THIS FACILITY

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Mineral Resource Data System (MRDS)

MAP ID# 9

Distance from Property: 0.107 mi. (565 ft.) WSW
Elevation: 1,760 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10029926**
DEP ID: **10029926**
MINE NAME: **ROBERT NELSON CLAIM**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **OCCURRENCE**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **ROBERT NELSON CLAIM**
STATUS: **CURRENT**

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MAP ID# 9

Distance from Property: 0.107 mi. (565 ft.) WSW
Elevation: 1,760 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **10029927**
DEP ID: **10029927**
MINE NAME: **WHEELOCK**
ADDRESS: **EL DORADO COUNTY**
DIAMOND SPRINGS, CA 95619
DEVELOPMENT STATUS: **OCCURRENCE**

COMMODITY DETAILS

COMMODITY: **GOLD**
COMMODITY TYPE: **METALLIC**
COMMODITY GROUP: **GOLD**
IMPORTANCE: **PRIMARY**

MATERIAL DETAILS

NO MATERIAL DETAILS REPORTED

NAME DETAILS

SITE NAME: **WHEELOCK**
STATUS: **CURRENT**

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Superfund Enterprise Management System Archived Site Inventory (SEMSARCH)

MAP ID# 10

Distance from Property: 0.201 mi. (1,061 ft.) WNW
Elevation: 1,762 ft. (Higher than TP)

FACILITY INFORMATION

EPA ID#: **CAD980637417**
SITE ID#: **0901900**
NAME: **OLD CALDOR LUMBER CO YD**
ADDRESS: **HWY 49 & FLAT RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
FEDERAL FACILITY: **NOT A FEDERAL FACILITY**
NPL: **NOT ON THE NPL**
NON NPL STATUS: **NFRAP-SITE DOES NOT QUALIFY FOR THE NPL BASED ON EXISTING INFORMATION**
SEMS SEARCH: **CLICK HERE**

Below information was gathered from the prior NFRAP update completed in 10/2013 update:

ACTION	START DATE	COMPLETION DATE	RESPONSIBILITY
PA - PRELIMINARY ASSESSMENT	**2/1/1985**	**5/1/1985**	**STATE (FUND)**
DS - DISCOVERY	**NOT REPORTED**	**6/1/1981**	**EPA FUND**
PA - PRELIMINARY ASSESSMENT	**NOT REPORTED**	**7/1/1988**	**EPA FUND**
VS - ARCHIVE SITE	**NOT REPORTED**	**7/1/1988**	**EPA IN-HOUSE**

ACTION DESCRIPTIONS

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

DS - (DISCOVERY) - THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

VS - (ARCHIVE SITE) - THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.

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Historical Underground Storage Tanks (HISTUST)

MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



EL DORADO UNION HIGH SCHOOL DI, 4675 MISSOURI FLAT ROAD, DIAMOND SPRINGS, CA 95619
UNIQUE ID: **0002344F**



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MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

FACILITY INFORMATION

FACILITY #: **46253**
STATUS: **ACTIVE**
BOE: **44-003046**
JURISDICTION: **EL DORADO COUNTY**
NAME: **EL DORADO UNION HIGH SCHOOL DI**
AGENCY: **ENVIRONMENTAL HEALTH - U.S.T.**
ADDRESS: **4675 MISSOURI FLAT RD**
DIAMOND SPRINGS, CA 95619

TANK INFORMATION

TANK #: **000001**
CAPACITY: **12000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **DIESEL**
CONTAINMENT: **NOT REPORTED**

TANK #: **000002**
CAPACITY: **8000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **REG UNLEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000003**
CAPACITY: **1000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **LEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000004**
CAPACITY: **12000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **DIESEL**
CONTAINMENT: **NOT REPORTED**

TANK #: **000005**
CAPACITY: **8000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **REG UNLEADED**
CONTAINMENT: **NOT REPORTED**

TANK #: **000006**
CAPACITY: **1000**
INSTALLED: **NOT REPORTED**
REMOVED: **NOT REPORTED**
TANK USE: **M.V. FUEL**
STORAGE TYPE: **PRODUCT**
CONTENT: **LEADED**
CONTAINMENT: **NOT REPORTED**

Back to Report Summary

Underground Storage Tanks (USTCUPA)

MAP ID# 11

Distance from Property: 0.211 mi. (1,114 ft.) WNW
Elevation: 1,799 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **187573130** FACILITY ID: **FA0000680**

NAME: **EDUHSD TRANSPORTATION**

ADDRESS: **4675 MISSOURI FLAT RD**
PLACERVILLE, CA 95667

COUNTY: **EL DORADO**

FACILITY DETAILS

OTHER FACILITY NAME(S) LISTED FOR THIS SITE: **EDUHSD TRANSPORTATION**

PERMIT AGENCY: **EL DORADO COUNTY ENVIRONMENTAL MANAGEMENT**

FACILITY DETAILS LINK: *Click Here*

Back to Report Summary

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T10000009244**
URL LINK: CLICK HERE
BUSINESS NAME: **WASTE CONNECTIONS**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **CLEANUP PROGRAM SITE**
CASE NUMBER: **NOT REPORTED**
STATUS: **OPEN - SITE ASSESSMENT 08/12/2016**
POTENTIAL CONTAMINATION:
OTHER ACID OR CORROSIVE
POTENTIAL MEDIA AFFECTED:
NOT REPORTED
SITE HISTORY:
SITE WAS CONSTRUCTED ON A FORMER LIME PROCESSING FACILITY. LIME WASTE BENEATH SITE HAS ELEVATED PH AND THREATENS GROUNDWATER.

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**06/18/2018**	**STAFF LETTER**
RESPONSE	**04/24/2018**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**01/31/2018**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**01/31/2018**	**NOTIFICATION - PUBLIC PARTICIPATION DOCUMENT**
ENFORCEMENT	**12/11/2017**	**STAFF LETTER**
RESPONSE	**11/15/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**11/14/2017**	**CORRESPONDENCE**
ENFORCEMENT	**11/08/2017**	**STAFF LETTER**
ENFORCEMENT	**10/24/2017**	**LETTER - NOTICE**
RESPONSE	**10/24/2017**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**10/15/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**10/03/2017**	**FEASIBILITY STUDY REPORT**
RESPONSE	**07/31/2017**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**06/09/2017**	**STAFF LETTER**
RESPONSE	**05/25/2017**	**SITE INVESTIGATION**
ENFORCEMENT	**02/10/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**02/10/2017**	**CORRESPONDENCE**
ENFORCEMENT	**02/08/2017**	**EMAIL CORRESPONDENCE**
RESPONSE	**02/08/2017**	**SOIL AND WATER INVESTIGATION WORKPLAN**
ENFORCEMENT	**02/07/2017**	**STAFF LETTER**
ENFORCEMENT	**02/06/2017**	**STAFF LETTER**
RESPONSE	**01/30/2017**	**SITE INVESTIGATION WORKPLAN**
RESPONSE	**01/24/2017**	**SOIL AND WATER INVESTIGATION REPORT**

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**11/04/2016**	**EMAIL CORRESPONDENCE**
RESPONSE	**10/17/2016**	**SITE INVESTIGATION WORKPLAN**
ENFORCEMENT	**09/08/2016**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**08/15/2016**	**STAFF LETTER**
RESPONSE	**07/22/2016**	**SITE INVESTIGATION**

STATUS HISTORY

STATUS:	DATE:
OPEN - SITE ASSESSMENT	**08/12/2016**
OPEN - CASE BEGIN DATE	**07/22/2016**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE, SUITE 200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **WALTER FLOYD**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **9164644651**
EMAIL: **WALTER.FLOYD@WATERBOARDS.CA.GOV**

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Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0674**
NAME: **MATERIAL RECOVERY FACILITY**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **12/23/96**
OPERATION END DATE: **07/19/00**
PROGRAM PHONE: **(530) 642-0731**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **NOT ACCEPTED**

Back to Report Summary

Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0880**
NAME: **EL DORADO DISPOSAL SERVICE MRF**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **9/22/2006**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

Back to Report Summary

Listing of Certified Dropoff, Collection, and Community Service Programs (DROP)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0961**
NAME: **SEI SOLID WASTE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **3/9/2009**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

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Listing of Certified Processors (PROC)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **PR0439**
NAME: **EL DORADO DISPOSAL SERVICE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **10/12/2006**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0004SWIS**
ID NUMBER: **09-AA-0004**
NAME: **WESTERN EL DORADO RECOVERY SYSTEMS MRF**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.698960000**
LONGITUDE: **-120.815620000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS OF CALIFORNIA, INC.**
ADDRESS: **10001 WOODLOCH FOREST DRIVE, SUITE 400**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO REG SYSTEM**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **384**
LAND USE: **NOT REPORTED**
PERMIT DATE: **2/23/2005**
PERMIT STATUS: **PERMITTED**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **TRANSFER/PROCESSING**
UNIT #: **01**
REGULATORY STATUS: **PERMITTED**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **LARGE VOLUME TRANSFER/PROC FACILITY**
INSPECTION: **MONTHLY**
ACCEPTED WASTE: **MIXED MUNICIPAL**
CAPACITY: **400**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **400**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

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Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0006SWIS**
ID NUMBER: **09-AA-0006**
NAME: **WEDRS-GREEN WASTE RECYCLING CENTER**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.699250000**
LONGITUDE: **-120.815810000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS, INC.**
ADDRESS: **3 WATERWAY SQUARE PLACE, SUITE 110**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO SERVICES, INC.**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **10521**
LAND USE: **COMMERCIAL**
PERMIT DATE: **8/5/2014**
PERMIT STATUS: **NOTIFICATION**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **COMPOSTING**
UNIT #: **01**
REGULATORY STATUS: **NOTIFICATION**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **CHIPPING AND GRINDING ACTIVITY FAC./ OP.**
INSPECTION: **QUARTERLY**
ACCEPTED WASTE: **GREEN MATERIALS**
CAPACITY: **72600**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **200**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

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Solid Waste Information System Sites (SWIS)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **09-AA-0007SWIS**
ID NUMBER: **09-AA-0007**
NAME: **WEDRS- CDI RECOVETY OPERATION (MVCDI)**
LOCATION: **4100 THROWITA WAY**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
LATITUDE: **38.699250000**
LONGITUDE: **-120.815810000**

OWNER INFORMATION

NAME: **WASTE CONNECTIONS, INC.**
ADDRESS: **3 WATERWAY SQUARE PLACE, SUITE 110**
THE WOODLANDS, TX 77380

OPERATOR INFORMATION

NAME: **WESTERN EL DORADO SERVICES, INC.**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667

FACILITY DETAILS

SITE ID: **10522**
LAND USE: **NOT REPORTED**
PERMIT DATE: **6/10/2009**
PERMIT STATUS: **PERMITTED**
ENFORCEMENT AGENCY: **COUNTY OF PLACER**

UNIT

CATEGORY: **TRANSFER/PROCESSING**
UNIT #: **01**
REGULATORY STATUS: **PERMITTED**
OPERATIONAL STATUS: **ACTIVE**
ACTIVITY: **MEDIUM VOL CD WOOD DEBRIS CHIPGRIND FAC.**
INSPECTION: **MONTHLY**
ACCEPTED WASTE: **CONSTRUCTION/DEMOLITION,INERT,METALS,WOOD WASTE**
CAPACITY: **63525**
REMAINING CAPACITY: **NOT REPORTED**
THROUGHPUT: **175**
DISPOSAL ACREAGE: **NOT REPORTED**
CLOSURE DATE: **NOT REPORTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CP0880**
NAME: **EL DORADO DISPOSAL SERVICE MRF**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **09/22/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **ACCEPTED**
ALUMINIUM: **ACCEPTED**
PLASTIC: **ACCEPTED**
BIMETAL: **ACCEPTED**

Back to Report Summary

Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1171**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **05/19/05**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **PO BOX 1270**
DIAMOND SPRINGS CA 95619
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

Back to Report Summary

Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1234**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1235**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

Back to Report Summary

Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS1236**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/24/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **CS19394.001**
NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/15/16**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **PR0439**
NAME: **EL DORADO DISPOSAL SERVICE**
ADDRESS: **4100 THROWITA WAY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **10/12/06**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **WASTE CONNECTIONS OF CALIFORNIA INC**
ADDRESS: **4100 THROWITA WAY**
PLACERVILLE CA 95667
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 12

Distance from Property: 0.333 mi. (1,758 ft.) NNE
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC10531**
NAME: **WESTERN EL DORADO RECOVERY SYSTEMS**
ADDRESS: **4100 THROWITA WY**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **08/30/00**
OPERATION END DATE: **11/09/06**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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Recycling Centers (SWRCY)

MAP ID# 13

Distance from Property: 0.396 mi. (2,091 ft.) WNW
Elevation: 1,816 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC10654**
NAME: **MISSOURI FLAT RECYCLE CENTER**
ADDRESS: **4600 MISSOURI FLAT RD**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **02/06/01**
OPERATION END DATE: **NOT REPORTED**
PROGRAM PHONE: **(530) 626-4141**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

FACILITY INFORMATION

ID #: **09750002**

NAME: **FOOTHILL AUTO REPAIR**

ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA

STATUS (DATE): **PROPERTY/SITE REFERRED TO RWQCB (07/15/1987)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:
AUTO REPAIR, SERVICES & PARKING

ACCESS TO SITE: **CONTROLLED**

GROUNDWATER CONTAMINATION: **NOT REPORTED**

COMMENTS

FACILITY IDENTIFIED EL DORADO CO HEALTH RECEIVED A COMPLAINT OF POSSIBLE WELL WATER CONTAMINATION. INSPECTION(LOCAL) EL DORADO CO HLTH/CENTRAL VALLEY RWQCB OPERATOR ALLOWED SOLVENTS, ANTIFREEZE, AND WASTE OIL TO FLOW TO GROUND FACILITY DRIVE-BY DHS (SSP); STAINED SOIL, POOR HOUSEKEEP DHS RECORDS SEARCH-NO FILE FOUND STATE LANDS COMMISSION DEPT. OF WATER RESOURCES PRELIM ASSESS DONE PENDING PER CVRWQCB WELL WATER SAMPLES SAMPLE RESULTS NFA BASED ON CVRWQCB SAMPLES; NO DETECTABLE LIMITS (<.5) OF MISC. PETROLEUM PRODUCTS (GASOLINE & SOLVENTS)

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MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

SITE INFORMATION

ID #: **09750002** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **FOOTHILL AUTO REPAIR**
ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 07/15/1987)
REFER: RWQCB -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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Referred to Another Local or State Agency (REF)

MAP ID# 14

Distance from Property: 0.401 mi. (2,117 ft.) WNW
Elevation: 1,802 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **9750002**
ENVIROSTOR ID: **9750002**
FACILITY NAME: **FOOTHILL AUTO REPAIR**
ADDRESS: **6566-C COMMERCE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

PROGRAM TYPE: **EVALUATION**
STATUS: **REFER: RWQCB**
STATUS DATE: **7/15/1987**
CALENVIROSCREEN SCORE: **36-40%**
SITE CODE: **NOT REPORTED**

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Historical Cortese List (HISTCORTESE)

MAP ID# 15

Distance from Property: 0.403 mi. (2,128 ft.) N
Elevation: 1,801 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **6A189101N25COR**
ID#: **6A189101N25**
NAME: **GUSTAFSON D M & PATRICI**
ADDRESS: **3655 CHUCKWAGON**
PLACERVILLE, CA 95667

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MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700077**
URL LINK: CLICK HERE
BUSINESS NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **90096**
STATUS: **COMPLETED - CASE CLOSED 01/02/2013**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
AQUIFER USED FOR DRINKING WATER SUPPLY
SITE HISTORY:
THE FIRST THREE MONITORING WELLS WERE INSTALLED ON SITE IN NOVEMBER 1999. BY THE TIME OF THE INITIATION OF THE OFF SITE INVESTIGATION IN THE FALL OF 2001, THE AVERAGE REPORTED MTBE CONCENTRATIONS IN THESE THREE WELLS WAS 50,083 ÌG/L. THE AVERAGE CONCENTRATION IN THESE THREE WELLS FOR THE LAST FOUR SEMI-ANNUAL MONITORING EVENTS IS 566 ÌG/L. THIS REPRESENTS A 98.9 PERCENT REDUCTION SINCE ONSITE REMEDIATION BEGAN IN EARLY 2002. OFF SITE INVESTIGATION CONTINUED THROUGH TO THE SUMMER OF 2004 WITH CONCURRENT REMEDIAL ACTIVITIES. BY AUGUST 2004 THERE WERE 29 MONITORING WELLS AND TWO EXTRACTION WELLS IN USE. ELEVEN OF THE MONITORING WELLS DEFINE THE OUTWARD EXTENT OR EDGES OF THE MTBE PLUME, COMPRISING THE WELLS THAT HAVE CONSISTENTLY BEEN REPORTED WITH MTBE BELOW THE DRINKING WATER STANDARD. A SENSITIVE RECEPTOR SURVEY WAS COMPLETED IN LATE 2000. THERE WERE NO WATER SUPPLY WELLS LOCATED WITHIN THE EXTENT OF THE PLUME, LATER DEFINED, AND ONLY FIVE WELLS WERE FOUND IN THE 2000 FOOT SEARCH RADIUS. THE CLOSEST WAS OVER 500 FEET CROSS GRADIENT OF THE PLUME AND HAS SUBSEQUENTLY BEEN REMOVED. GROUNDWATER AS A POTENTIAL SOURCE VAPOR EMANATIONS WAS ADDRESSED IN WORKPLAN DATED JANUARY 26, 2007 INDICATING THAT THERE WERE NO AREAS THAT COULD POTENTIALLY BE IMPACTED TO INVESTIGATE. THIS WAS AFFIRMED IN THE WORKPLAN APPROVAL LETTER FROM THE REGIONAL BOARD DATED 6 FEBRUARY 2007. PATTERSON LAKE IS SITUATED DOWNGRADIENT OF THE SOUTHWESTERLY DIRECTED PLUME THAT ORIGINATED AT THE PROPERTY NOW OWNED BY TOWER ENERGY GROUP. THE LAKE HAS FUNCTIONED AS A HYDRAULIC BARRIER, LOWERING THE GROUNDWATER GRADIENT IN ITS AREA AND SLOWING THE PREREMEDIAL ADVANCEMENT OF THE PLUME. THREE 10,000 GALLON UST'S AND ASSOCIATED PIPING WERE REMOVED FROM THE SITE IN THE SUMMER OF 2010 STATION UPGRADES ACTIVITIES.

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
OTHER	**01/01/50**	**LEAK BEGAN**
OTHER	**01/01/50**	**LEAK DISCOVERY**
OTHER	**01/01/50**	**LEAK REPORTED**
OTHER	**01/01/50**	**LEAK STOPPED**
REMEDIATION	**01/01/50**	**IN SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN SVE)**
REMEDIATION	**01/01/50**	**OTHER (USE DESCRIPTION FIELD)**
REMEDIATION	**01/01/50**	**PUMP & TREAT (P&T) GROUNDWATER**
ENFORCEMENT	**01/02/2013**	**CLOSURE/NO FURTHER ACTION LETTER**

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	10/30/2012	LOP CASE CLOSURE SUMMARY TO RB
ENFORCEMENT	09/30/2012	LETTER - NOTICE
ENFORCEMENT	08/24/2012	STAFF LETTER
ENFORCEMENT	06/08/2012	STAFF LETTER
ENFORCEMENT	02/16/2012	STAFF LETTER
ENFORCEMENT	08/25/2010	STAFF LETTER
ENFORCEMENT	08/12/2010	STAFF LETTER
ENFORCEMENT	08/12/2010	STAFF LETTER
ENFORCEMENT	04/11/2010	STAFF LETTER
ENFORCEMENT	02/27/2009	STAFF LETTER
ENFORCEMENT	10/01/2008	LETTER - NOTICE
RESPONSE	04/30/2008	REMEDIAL PROGRESS REPORT
RESPONSE	04/30/2008	OTHER REPORT / DOCUMENT
RESPONSE	01/31/2008	REMEDIAL PROGRESS REPORT
RESPONSE	10/30/2007	OTHER REPORT / DOCUMENT
RESPONSE	07/30/2007	REMEDIAL PROGRESS REPORT
RESPONSE	04/30/2007	INTERIM REMEDIAL ACTION REPORT
RESPONSE	04/30/2007	MONITORING REPORT - QUARTERLY
ENFORCEMENT	04/10/2007	MEETING
ENFORCEMENT	02/06/2007	STAFF LETTER
ENFORCEMENT	02/01/2007	SITE VISIT / INSPECTION / SAMPLING
RESPONSE	01/31/2007	OTHER WORKPLAN
RESPONSE	01/31/2007	OTHER REPORT / DOCUMENT
RESPONSE	01/31/2007	MONITORING REPORT - QUARTERLY
RESPONSE	12/29/2006	OTHER REPORT / DOCUMENT
ENFORCEMENT	12/19/2006	STAFF LETTER
RESPONSE	10/31/2006	MONITORING REPORT - QUARTERLY
ENFORCEMENT	10/24/2006	VERBAL COMMUNICATION
RESPONSE	07/30/2006	MONITORING REPORT - QUARTERLY
RESPONSE	04/30/2006	MONITORING REPORT - QUARTERLY
RESPONSE	01/31/2006	MONITORING REPORT - QUARTERLY
RESPONSE	10/31/2005	MONITORING REPORT - QUARTERLY
RESPONSE	07/15/2005	MONITORING REPORT - QUARTERLY
REMEDIATION	07/11/2005	IN SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN SVE)
RESPONSE	04/30/2005	MONITORING REPORT - QUARTERLY
RESPONSE	01/31/2005	MONITORING REPORT - QUARTERLY
RESPONSE	10/15/2004	MONITORING REPORT - QUARTERLY
RESPONSE	07/15/2004	MONITORING REPORT - QUARTERLY
ENFORCEMENT	04/15/2004	STAFF LETTER
RESPONSE	04/15/2004	MONITORING REPORT - QUARTERLY
RESPONSE	04/09/2004	OTHER WORKPLAN
REMEDIATION	03/05/2004	PUMP & TREAT (P&T) GROUNDWATER
ENFORCEMENT	02/27/2004	STAFF LETTER
RESPONSE	01/15/2004	MONITORING REPORT - QUARTERLY

TYPE OF ACTION:	DATE:	ACTION:
RESPONSE	**10/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**07/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**04/15/2003**	**MONITORING REPORT - QUARTERLY**
RESPONSE	**01/15/2003**	**MONITORING REPORT - QUARTERLY**
ENFORCEMENT	**07/26/2002**	**FILE REVIEW**
ENFORCEMENT	**07/25/2002**	**FILE REVIEW**
ENFORCEMENT	**02/25/2002**	**FILE REVIEW**
ENFORCEMENT	**10/17/2001**	**STAFF LETTER**
REMEDIATION	**08/03/2001**	**OTHER (USE DESCRIPTION FIELD)**
ENFORCEMENT	**07/11/2001**	**STAFF LETTER**
ENFORCEMENT	**04/20/2001**	**STAFF LETTER**
ENFORCEMENT	**10/24/2000**	**STAFF LETTER**
ENFORCEMENT	**05/26/2000**	**STAFF LETTER**
ENFORCEMENT	**07/23/1997**	**REFERRAL TO REGIONAL BOARD**
OTHER	**07/23/1997**	**LEAK BEGAN**
OTHER	**07/23/1997**	**LEAK STOPPED**
OTHER	**07/23/1997**	**LEAK REPORTED**
OTHER	**06/22/1997**	**LEAK DISCOVERY**
RESPONSE	**04/15/0204**	**MONITORING REPORT - QUARTERLY**

STATUS HISTORY

STATUS:	DATE:
COMPLETED - CASE CLOSED	**01/02/2013**
OPEN - ELIGIBLE FOR CLOSURE	**10/10/2012**
OPEN - VERIFICATION MONITORING	**11/06/2009**
OPEN - REMEDIATION	**03/08/2008**
OPEN - REMEDIATION	**03/06/2008**
OPEN - REMEDIATION	**07/30/2007**
OPEN - REMEDIATION	**07/11/2005**
OPEN - REMEDIATION	**04/08/2004**
OPEN - SITE ASSESSMENT	**04/18/2001**
OPEN - SITE ASSESSMENT	**12/01/2000**
OPEN - CASE BEGIN DATE	**06/22/1997**
OPEN - SITE ASSESSMENT	**06/22/1997**

CONTACT DETAILS

ORGANIZATION: **EL DORADO COUNTY**

ADDRESS: **2850 FAIRLANE CT., BUILDING C**

CITY: **PLACERVILLE**

CONTACT NAME: **ROBERT LAURITZEN**

CONTACT TYPE: **LOCAL AGENCY CASEWORKER**

CONTACT PHONE: **NOT REPORTED**

EMAIL: **ROBERT.LAURITZEN@EDCGOV.US**

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Historical Cortese List (HISTCORTESE)

MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **090096COR**
ID#: **090096**
NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY**
DIAMOND SPRINGS, CA 95619

Back to Report Summary

Leaking Underground Storage Tanks (LUST)

MAP ID# 16

Distance from Property: 0.443 mi. (2,339 ft.) WNW
Elevation: 1,747 ft. (Lower than TP)

FACILITY INFORMATION

GLOBAL ID: **T0601700077**
URL LINK: CLICK HERE
BUSINESS NAME: **STEVE'S CHEAPER**
ADDRESS: **130 PLEASANT VALLEY RD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **LUST CLEANUP SITE**
CASE NUMBER: **090096**
STATUS: **01/02/2013**
POTENTIAL CONTAMINATION:
GASOLINE
POTENTIAL MEDIA AFFECTED:
AQUIFER USED FOR DRINKING WATER SUPPLY
SITE HISTORY:
THE FIRST THREE MONITORING WELLS WERE INSTALLED ON SITE IN NOVEMBER 1999. BY THE TIME OF THE INITIATION OF THE OFF SITE INVESTIGATION IN THE FALL OF 2001, THE AVERAGE REPORTED MTBE CONCENTRATIONS IN THESE THREE WELLS WAS 50,083 ÌG/L. THE AVERAGE CONCENTRATION IN THESE THREE WELLS FOR THE LAST FOUR SEMI-ANNUAL MONITORING EVENTS IS 566 ÌG/L. THIS REPRESENTS A 98.9 PERCENT REDUCTION SINCE ONSITE REMEDIATION BEGAN IN EARLY 2002. OFF SITE INVESTIGATION CONTINUED THROUGH TO THE SUMMER OF 2004 WITH CONCURRENT REMEDIAL ACTIVITIES. BY AUGUST 2004 THERE WERE 29 MONITORING WELLS AND TWO EXTRACTION WELLS IN USE. ELEVEN OF THE MONITORING WELLS DEFINE THE OUTWARD EXTENT OR EDGES OF THE MTBE PLUME, COMPRISING THE WELLS THAT HAVE CONSISTENTLY BEEN REPORTED WITH MTBE BELOW THE DRINKING WATER STANDARD. A SENSITIVE RECEPTOR SURVEY WAS COMPLETED IN LATE 2000. THERE WERE NO WATER SUPPLY WELLS LOCATED WITHIN THE EXTENT OF THE PLUME, LATER DEFINED, AND ONLY FIVE WELLS WERE FOUND IN THE 2000 FOOT SEARCH RADIUS. THE CLOSEST WAS OVER 500 FEET CROSS GRADIENT OF THE PLUME AND HAS SUBSEQUENTLY BEEN REMOVED. GROUNDWATER AS A POTENTIAL SOURCE VAPOR EMANATIONS WAS ADDRESSED IN WORKPLAN DATED JANUARY 26, 2007 INDICATING THAT THERE WERE NO AREAS THAT COULD POTENTIALLY BE IMPACTED TO INVESTIGATE. THIS WAS AFFIRMED IN THE WORKPLAN APPROVAL LETTER FROM THE REGIONAL BOARD DATED 6 FEBRUARY 2007. PATTERSON LAKE IS SITUATED DOWNGRADIENT OF THE SOUTHWESTERLY DIRECTED PLUME THAT ORIGINATED AT THE PROPERTY NOW OWNED BY TOWER ENERGY GROUP. THE LAKE HAS FUNCTIONED AS A HYDRAULIC BARRIER, LOWERING THE GROUNDWATER GRADIENT IN ITS AREA AND SLOWING THE PREREMEDIAL ADVANCEMENT OF THE PLUME. THREE 10,000 GALLON UST'S AND ASSOCIATED PIPING WERE REMOVED FROM THE SITE IN THE SUMMER OF 2010 STATION UPGRADES ACTIVITIES.

HISTORICAL FACILITY DETAILS

NO HISTORICAL DETAIL(S) INFORMATION REPORTED FOR THIS FACILITY

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MAP ID# 17

Distance from Property: 0.481 mi. (2,540 ft.) NNE
Elevation: 1,819 ft. (Higher than TP)

FACILITY INFORMATION

GLOBAL ID: **T10000010458**
URL LINK: CLICK HERE
BUSINESS NAME: **ABEL TRUST**
ADDRESS: **4061 LIME PLANT ROAD**
DIAMOND SPRINGS, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

CASE TYPE: **CLEANUP PROGRAM SITE**
CASE NUMBER: **NOT REPORTED**
STATUS: **OPEN - ACTIVE 06/09/2017**
POTENTIAL CONTAMINATION:
OTHER ACID OR CORROSIVE
POTENTIAL MEDIA AFFECTED:
NOT REPORTED
SITE HISTORY:
NOT REPORTED

REGULATORY ACTIVITIES

TYPE OF ACTION:	DATE:	ACTION:
ENFORCEMENT	**04/09/2018**	**STAFF LETTER**
RESPONSE	**03/16/2018**	**REMOVAL ACTION WORK PLAN**
ENFORCEMENT	**02/06/2018**	**STAFF LETTER**
RESPONSE	**02/01/2018**	**CORRESPONDENCE**
ENFORCEMENT	**01/22/2018**	**STAFF LETTER**
RESPONSE	**01/12/2018**	**SITE INVESTIGATION**
ENFORCEMENT	**11/15/2017**	**LETTER - NOTICE**
RESPONSE	**11/06/2017**	**PRELIMINARY SITE ASSESSMENT WORKPLAN**
ENFORCEMENT	**10/26/2017**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**05/16/2017**	**EMAIL CORRESPONDENCE**
ENFORCEMENT	**04/17/2017**	**13267 REQUIREMENT**
ENFORCEMENT	**11/15/2016**	**LETTER - NOTICE**

STATUS HISTORY

STATUS:	DATE:
OPEN - ACTIVE	**06/09/2017**
OPEN - CASE BEGIN DATE	**11/15/2016**

CONTACT DETAILS

ORGANIZATION: **CENTRAL VALLEY RWQCB (REGION 5S)**
ADDRESS: **11020 SUN CENTER DRIVE, SUITE 200**
CITY: **RANCHO CORDOVA**
CONTACT NAME: **WALTER FLOYD**
CONTACT TYPE: **REGIONAL BOARD CASEWORKER**
CONTACT PHONE: **9164644651**
EMAIL: **WALTER.FLOYD@WATERBOARDS.CA.GOV**

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MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

FACILITY INFORMATION

ID #: **09340001**

NAME: **CELEBRITY PLATING**

ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA

STATUS (DATE): **PRELIMINARY ENDANGERMENT ASSESSMENT REQUIRED (04/14/1997)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:
MANU - FABRICATED METAL PRODUCTS

ACCESS TO SITE: **NOT REPORTED**

GROUNDWATER CONTAMINATION: **NOT REPORTED**

COMMENTS

SITE SCREENING COMPLETED. EL DORADO COUNTY HEALTH DEPARTMENT SUBMITTED AN INVESTIGATION REPORT TO DTSC FOR REVIEW AND COMMENT. DTSC STAFF PERFORMED A CURSORY REVIEW OF THE REPORT AND CONDUCTED A SITE VISIT. THE HOUSEKEEPING PRACTICES IN THE PLATING AREA WERE POOR. MOST OF THE FLOOR AND WALLS SHOWED SIGNS OF SPILLS AND LEAKS. SOIL SAMPLES FROM BENEATH THE FLOOR WERE CONTAMINATED WITH 42 PPM CYANIDE, 159 PPM CHROMIUM, 123 PPM COPPER, 1010 PPM NICKEL AND OTHER METALS. A PRELIMINARY ENDANGERMENT ASSESSMENT IS REQUIRED TO DETER-THE POTENTIAL THREAT POSED BY ONSITE CONTAMINATION.

Back to Report Summary

MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **09340001** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY PLATING**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **10**
LEAD AGENCY: **HWMP**
DTSC PROJECT MANAGER: **LANCE MCMAHAN**
DTSC SUPERVISOR: **NOEL SHRUM**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **CORRECTIVE ACTION**
SITE TYPE DESCRIPTION
INVESTIGATION AND CLEANUP ACTIVITIES AT HAZARDOUS WASTE FACILITIES (EITHER RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) OR STATE-ONLY) THAT EITHER WERE ELIGIBLE FOR A PERMIT OR RECEIVED A PERMIT, ARE CALLED CORRECTIVE ACTION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 04/05/2010)
NO FURTHER ACTION - IDENTIFIES COMPLETED SITES WHERE DTSC DETERMINED AFTER INVESTIGATION, GENERALLY A PEA (AN INITIAL ASSESSMENT), THAT THE PROPERTY DOES NOT POSE A PROBLEM TO PUBLIC HEALTH OR THE ENVIRONMENT
PAST USE/S THAT CAUSED THE CONTAMINATION
HAZARDOUS WASTE TREATMENT, METAL PLATING - CHROME
CONFIRMED CONTAMINANTS OF CONCERN
30152 - CHROMIUM III
30153 - CHROMIUM VI
30160 - CYANIDE (FREE)
30406 - NICKEL (SOLUBLE SALTS)

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MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **71003046** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY, INC.**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **NOT REPORTED**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **NOT REPORTED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **TIERED PERMIT**
SITE TYPE DESCRIPTION
NOT REPORTED
DTSC's CURRENT INVOLVEMENT AT SITE (as of 07/07/2003)
NO ACTION REQUIRED - IDENTIFIES SITES WHERE A PHASE I ENVIRONMENTAL ASSESSMENT WAS COMPLETED AND RESULTED IN A NO ACTION REQUIRED DETERMINATION
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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No Further Action Determination (NFA)

MAP ID# 18

Distance from Property: 0.497 mi. (2,624 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: **71003046**
ENVIROSTOR ID: **71003046**
FACILITY NAME: **CELEBRITY, INC.**
ADDRESS: **4502 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**

FACILITY DETAILS

PROGRAM TYPE: **TIERED PERMIT**
STATUS: **NO ACTION REQUIRED**
STATUS DATE: **7/7/2003**
CALENVIROSCREEN SCORE: **36-40%**
SITE CODE: **101525**

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Recycling Centers (SWRCY)

MAP ID# 19

Distance from Property: 0.498 mi. (2,629 ft.) N
Elevation: 1,812 ft. (Higher than TP)

SITE INFORMATION

ID #: **RC4019**
NAME: **E M RECYCLING**
ADDRESS: **4040 #A-2 STAGE CT**
CITY: **PLACERVILLE**
STATE: **CA**
ZIP: **95667**
COUNTY: **EL DORADO**

SITE DETAILS

OPERATION BEGIN DATE: **01/09/91**
OPERATION END DATE: **01/07/93**
PROGRAM PHONE: **(916) 621-2027**
ORGANIZATION NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
CITY NOT REPORTED
GLASS: **NOT ACCEPTED**
ALUMINIUM: **NOT ACCEPTED**
PLASTIC: **NOT ACCEPTED**
BIMETAL: **NOT ACCEPTED**

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MAP ID# 20

Distance from Property: 0.522 mi. (2,756 ft.) NNW
Elevation: 1,817 ft. (Higher than TP)

SITE INFORMATION

ID #: **09500006** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **TETERS AUTO WRECKERS**
ADDRESS: **4487 MISSOURI FLAT ROAD**
PLACERVILLE, CA 95667
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 09/12/1995)
REFER: OTHER AGENCY -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 21

Distance from Property: 0.641 mi. (3,384 ft.) WNW
Elevation: 1,757 ft. (Lower than TP)

SITE INFORMATION

ID #: **71003697** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **CELEBRITY, INC.**
ADDRESS: **6650 MERCHANDISE WAY**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **NOT REPORTED**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **NOT REPORTED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **TIERED PERMIT**
SITE TYPE DESCRIPTION
NOT REPORTED
DTSC's CURRENT INVOLVEMENT AT SITE (as of)
NO ACTION REQUIRED - IDENTIFIES SITES WHERE A PHASE I ENVIRONMENTAL ASSESSMENT WAS COMPLETED AND RESULTED IN A NO ACTION REQUIRED DETERMINATION
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 22

Distance from Property: 0.683 mi. (3,606 ft.) ENE
Elevation: 1,848 ft. (Higher than TP)

SITE INFORMATION

ID #: **09280001** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
URL LINK: CLICK HERE
NAME: **OXYGEN SERVICE AND SUPPLY COMPANY**
ADDRESS: **13 CHINA GARDEN ROAD**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **REFERRED - NOT ASSIGNED**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **EVALUATION**
SITE TYPE DESCRIPTION
EVALUATION: IDENTIFIES SUSPECTED, BUT UNCONFIRMED, CONTAMINATED SITES THAT NEED OR HAVE GONE THROUGH AN INVESTIGATION AND ASSESSMENT PROCESS. IF A SITE IS FOUND TO HAVE CONFIRMED CONTAMINATION, IT WILL CHANGE FROM EVALUATION TO EITHER A STATE RESPONSE OR VOLUNTARY CLEANUP SITE TYPE. SITES FOUND TO HAVE NO CONTAMINATION AT THE COMPLETION OF THE INVESTIGATION AND ASSESSMENT PROCESS RESULT IN A NO ACTION REQUIRED (FOR PHASE 1 ASSESSMENTS) OR NO FURTHER ACTION (FOR PHASE 2 ASSESSMENTS) DETERMINATION.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 05/31/1988)
REFER: OTHER AGENCY -
PAST USE/S THAT CAUSED THE CONTAMINATION
NONE SPECIFIED
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

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MAP ID# 23

Distance from Property: 0.818 mi. (4,319 ft.) WNW
Elevation: 1,794 ft. (Higher than TP)

SITE INFORMATION

ID #: **09730001** ASSESSOR'S PARCEL #: **32924051**
URL LINK: CLICK HERE
NAME: **OLD CALDOR LUMBER COMPANY YARD**
ADDRESS: **180 INDUSTRIAL DRIVE**
DIAMOND SPRINGS, CA 95619
COUNTY: **EL DORADO**
SITE SIZE (ACRES): **1**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: **STEVEN BECKER**
DTSC DIVISION BRANCH: **CLEANUP SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **HISTORICAL**
SITE TYPE DESCRIPTION
HISTORICAL: IDENTIFIES SITES FROM AN OLDER DATABASE WHERE NO SITE TYPE WAS IDENTIFIED. MOST OF THESE SITES HAVE A STATUS OF REFERRED OR NO FURTHER ACTION. DTSC IS WORKING TO CLEAN UP THIS DATA BY IDENTIFYING AN APPROPRIATE SITE TYPE FOR EACH "HISTORIC" SITE.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 02/27/1989)
NO FURTHER ACTION - IDENTIFIES COMPLETED SITES WHERE DTSC DETERMINED AFTER INVESTIGATION, GENERALLY A PEA (AN INITIAL ASSESSMENT), THAT THE PROPERTY DOES NOT POSE A PROBLEM TO PUBLIC HEALTH OR THE ENVIRONMENT
PAST USE/S THAT CAUSED THE CONTAMINATION
MANUFACTURING - LUMBER/WOOD PRODUCTS
CONFIRMED CONTAMINANTS OF CONCERN
NONE SPECIFIED

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Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

Database Name	Site ID#	Site Name	Address	City/State/Zip/County
DROP	CP0005	BOB'S SALVAGE	4000 UNION MINE RD	DIAMOND SPRINGS, CA 95619 EL DORADO
HISTUST	00023440	DIAMOND INDUSTRIAL PARK	NONE BRIGHT COURT	DIAMOND SPRINGS, CA 95619 El Dorado
SWEEPS	A09-000-34834	DIAMOND INDUSTRIAL PARK	BRIGHT CT	DIAMOND SPRINGS, CA 95619

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/15

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 10/05/17

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 08/03/15

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ECHOR09 Enforcement and Compliance History Information

VERSION DATE: 09/01/18

The EPA's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSCA Emergency Response Notification System

VERSION DATE: 10/28/18

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSCA Facility Registry System

VERSION DATE: 10/09/18

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR09 Hazardous Materials Incident Reporting System

VERSION DATE: 09/30/18

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 09/01/18

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 07/09/17

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 06/29/17

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements. Disclaimer: Due to agency regulations and policies, this database contains applicant/licensee location information which may or may not be related to the physical location per MLTS site.

NPDESR09 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES database was collected from December 2002 until April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data.This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

PADS PCB Activity Database System

VERSION DATE: 09/14/18

PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

PCSR09 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 09/26/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

SEMSLIENS SEMS Lien on Property

VERSION DATE: 08/13/18

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs. This is a listing of SEMS sites with a lien on the property.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of

these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete.

SSTS Section Seven Tracking System

VERSION DATE: 02/01/17

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/16

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/12

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

RCRAGR09 Resource Conservation & Recovery Act - Generator

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

RCRANGR09 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-generators. Non-Generators do not presently generate hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 09/01/18

Nationwide list of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

FEMAUST FEMA Owned Storage Tanks

VERSION DATE: 12/01/16

This is a listing of FEMA owned underground and aboveground storage tank sites. For security reasons, address information is not released to the public according to the U.S. Department of Homeland Security.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

ICISCLEANERS Integrated Compliance Information System Drycleaners

VERSION DATE: 09/01/18

This is a listing of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that
possess NAIC and SIC codes that classify businesses as drycleaner establishments.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 08/31/18

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 10/01/18

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

DNPL Delisted National Priorities List

VERSION DATE: 11/14/18

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 03/01/18

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

SEMS Superfund Enterprise Management System

VERSION DATE: 08/13/18

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 08/13/18

The Superfund Enterprise Management System Archive listing (SEMS-ARCHIVE) has replaced the CERCLIS NFRAP reporting system in 2015. This listing reflect sites that have been assessed and no further remediation is planned and is of no further interest under the Superfund program.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 09/14/18

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

DOD Department of Defense Sites

VERSION DATE: 12/01/14

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 06/01/15

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 03/01/18

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites.
During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 11/14/18

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 11/14/18

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 03/01/18

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RODS Record of Decision System

VERSION DATE: 08/13/18

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

CDL Clandestine Drug Labs

VERSION DATE: 12/31/17

The California Department of Toxic Substance Control (DTSC) provides this listing of illegal drug laboratories. Pursuant to Section 25354.5 of the California Health and Safety Code, DTSC conducts emergency removal actions at clandestine drug labs at the request of State and local law enforcement agencies. DTSC's contractors typically remove hazardous substances that may pose an immediate threat to public health and the environment while the enforcement officials are on scene. During the emergency removal actions, contractors remove and properly dispose of contaminated lab equipment, chemicals used to make the illegal drugs (usually methamphetamine), lab chemical wastes, and other grossly contaminated materials. DTSC does not perform additional assessment work beyond standard emergency removal actions and makes no further determination regarding the need for future cleanup work at the emergency removal location. The reported location information may or may not include the actual location of the illegal drug lab. The DTSC does not guarantee the accuracy of the address or location information or the condition of the location listed.

CHMIRS California Hazardous Material Incident Report System

VERSION DATE: 10/24/18

The California Hazardous Material Incident Report System database is provided by the California Emergency Management Agency. This database contains accidental or spill release information from reported hazardous material incidents since 1993.

DTSCDR DTSC Deed Restrictions

VERSION DATE: 10/07/18

The California Department of Toxic Substances Control (DTSC) maintains this listing of sites with deed restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities. The land use restrictions listed under the site management requirements are only an abbreviated summary of the land use restrictions, and may not encompass all restrictions and notification requirements placed on a property. For complete land use restriction information please contact the DTSC to review associated Land Use Restriction documents.

EMI Emissions Inventory Data

VERSION DATE: 12/31/16

The Air Resources Board's Emissions Inventory Database contains criteria pollutant data and toxic data on facilities throughout the state of California for the 2012-2000 inventory years.

HWTS Hazardous Waste Tanner Summary

VERSION DATE: 12/31/17

This data is prepared from information extracted from copies of hazardous waste manifests received each year by the Department of Toxic Substances Control. The Hazardous Waste Summary Report (Tanner Report) currently includes manifest data from the 1993 through the 2016 reporting years.

LDS Land Disposal Sites

VERSION DATE: 10/09/18

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

LIENS Recorded Environmental Cleanup Liens

VERSION DATE: 05/17/18

The California Department of Toxic Substance Control (DTSC) maintains this listing of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

MCS Military Cleanup Sites

VERSION DATE: 07/09/18

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater

NPDES National Pollutant Discharge Elimination System Facilities

VERSION DATE: 09/04/18

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

ABST Above Ground Storage Tanks

VERSION DATE: 09/13/18

This database, provided by the California Environmental Protection Agency's (CalEPA) Regulated Site Portal, contains aboveground petroleum storage tank facilities originating from the California Environmental Reporting System (CERS). These facilities store petroleum in aboveground storage tanks with oversight by local agencies. As of January 1, 2008, Assembly Bill No. 1130 of the Aboveground Petroleum Storage Act (APSA) authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. CalEPA Data Disclaimer: Information displayed in the portal is collected from separate agency databases and displayed unaltered. Information that is considered confidential, trade secret, or is otherwise protected by the agency that

manages the database is not loaded into the portal. For more detail about information displayed in the portal, please visit the data source sites. Please refer to AST2007 database for aboveground storage tank information obtained from the California State Water Resources Control Board prior to 2008 APSA requirements.

AST2007 Aboveground Storage Tanks Prior to January 2008

VERSION DATE: 12/01/07

This database contains aboveground storage tank facilities registered with the California State Water Resources Control Board (SWRCB) between 2007 and 2003. Since 2006, tanks were required to contain a minimum (even as cumulative) of 1320 gallons to be in the program. As of January 1, 2008, the SWRCB no longer maintains a list of registered aboveground storage tanks, due to effective Assembly Bill No. 1130 (Laird) of the Aboveground Petroleum Storage Act (APSA). This Bill authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. Please refer to ABST database as a current source for aboveground petroleum storage tank data.

CLEANER Dry Cleaner Facilities

VERSION DATE: 06/20/18

This database, created by accessing the California Department of Toxic Substances Control's (DTSC) Hazardous Waste Tracking System, includes dry cleaner facilities that have registered EPA identification numbers. These facilities are categorized with one of the following NAICS Codes: 81231 or 81232. This database may also include facilities other than dry cleaners who also register with these same NAICS Codes. Not all companies report their NAICS/SIC Codes to the DTSC and therefore this database may exclude registered dry cleaner facilities with incomplete classification information.

DTSCHWT DTSC Registered Hazardous Waste Transporters

VERSION DATE: 10/14/18

The Department of Toxic Substances Control provides this list of Registered Hazardous Waste Transporters.

HISTUST Historical Underground Storage Tanks

VERSION DATE: 12/31/87

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987 by the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

MINES Mines Listing

VERSION DATE: 07/31/18

This database includes mine site locations from the California Office of Mine Reclamation.

MWMP California Medical Waste Management Program Facility List

VERSION DATE: 06/29/18

To protect the public and the environment from potential infectious exposure to disease causing agents, the Medical Waste Management Program (MWMP), in the Environmental Management Branch of the California Department of Public Health, regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations.

SLIC Spills, Leaks, Investigation & Cleanup Recovery Listing

VERSION DATE: 06/16/08

These records are maintained by the California Regional Water Quality Control Board (RWQCB). This list includes contaminated sites that impact groundwater or have the potential to impact ground water. Please refer to CLEANUPSITES database as source of current data.

SWEEPS Statewide Environmental Evaluation and Planning System

VERSION DATE: 10/01/94

The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials. Refer to CUPA listing for source of current data.

USTCUPA Underground Storage Tanks

VERSION DATE: 10/18/18

An underground storage tank is an individual tank or group of tanks that store hazardous substances. Underground storage tanks are completely or considerably below the ground surface. This database contains UST permit data submitted from the Certified Unified Program Agencies (CUPA) directly to the State Water Resources Control Board. CUPA's are local agencies that have been certified by the California EPA to implement state environmental programs within the local agency's jurisdiction.

BF Brownfield Sites

VERSION DATE: 09/03/18

This database includes Brownfield sites from the State Water Resources Control Board. These are sites that have gone through the Moratorium of Agreement (MOA) process.

Environmental Records Definitions - STATE (CA)

CALSITES CALSITES Database

VERSION DATE: 05/01/04

This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

CLEANUPSITES GeoTracker Cleanup Sites

VERSION DATE: 10/09/18

This GeoTracker Cleanup Sites database is maintained by the State Water Resources Control Board. The database contains contaminated sites that impact groundwater or have the potential to impact ground water, including sites that require cleanup, such as Leaking Underground Storage Tank Sites, Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including: Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites. GeoTracker portals retrieve records and view integrated data sets from multiple State Water Board programs and other agencies.

CORTESE Cortese List

VERSION DATE: 10/18/18

This active listing includes hazardous waste and substances sites designated by the State Water Resources Control Board , the Integrated Waste Board, and the Department of Toxic Substance Control. The Cortese List is utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites.

DROP Listing of Certified Dropoff, Collection, and Community Service Programs

VERSION DATE: 10/14/18

Listing of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

ERAP Expedited Removal Action Program Sites

VERSION DATE: 10/14/18

The Expedited Remedial Action Program is a pilot project administered by the Department of Toxic Substances Control's Site Mitigation and Brownfields Reuse Program to promote the cleanup of up to 30 hazardous substance release sites. ERAP provides significant incentives for redevelopment of contaminated properties by promoting cleanups based on the planned land use, by providing a covenant not to sue, and by outlining a fair and equitable liability scheme.

HISTCORTESE Historical Cortese List

VERSION DATE: 11/02/02

This historical listing includes hazardous waste and substances sites designated by the State Water Resources Control Board, the Integrated Waste Board, and the Department of Toxic Substance Control. The Cortese List was utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. See CACORTESE for an updated version of this database.

LUST Leaking Underground Storage Tanks

VERSION DATE: 10/09/18

This database is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents. Please refer to the CLEANUPSITES database as source of current data.

NFA No Further Action Determination

VERSION DATE: 09/16/18

The NFA listing contains properties at which the Department of Toxic Substance Control has made a clear determination that the property does not pose a problem to the environment or to public health.

NFE Sites Needing Further Evaluation

VERSION DATE: 06/20/18

The NFE listing contains properties that the Department of Toxic Substance Control suspects with possible contamination. These are unconfirmed contaminated properties that need further assessment.

PROC Listing of Certified Processors

VERSION DATE: 08/12/18

Listing of Certified Processors that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

REF Referred to Another Local or State Agency

VERSION DATE: 06/21/18

The REF listing contains properties where contamination has not been confirmed and which were determined as not requiring direct Department of Toxic Substance Control Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Environmental Records Definitions - STATE (CA)

SWIS Solid Waste Information System Sites

VERSION DATE: 10/08/18

The Solid Waste Information System (SWIS) database includes information on solid waste facilities, operations, and disposal sites located in California. This database is maintained by the California Department of Resources Recycling and Recovery.

SWRCY Recycling Centers

VERSION DATE: 08/13/18

Listing of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

VCP Voluntary Cleanup Program

VERSION DATE: 10/14/18

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

WMUDS Waste Management Unit Database

VERSION DATE: 01/01/00

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

ENVIROSTOR EnviroStor Cleanup Sites

VERSION DATE: 10/14/18

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where DTSC has made a "No Action Required" determination are not included in this database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

Environmental Records Definitions - STATE (CA)

ENVIROSTORPCA EnviroStor Permitted and Corrective Action Sites

VERSION DATE: 10/18/18

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database contains detailed information on hazardous waste permitted and corrective action facilities. Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective action." These facilities treated stored, disposed and/or transferred hazardous waste.

TOXPITS Toxic Pits Cleanup Act Sites

VERSION DATE: 07/01/95

Toxic Pits are sites with possible contamination of hazardous substances where cleanup is necessary. This listing is no longer updated by the State Water Resources Control Board.

USTR09 Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/10/18

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

LUSTR09 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/10/18

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

TORRESDUMPSITES Illegal Dump Sites on the Torres Martinez Reservation

VERSION DATE: 10/29/07

This listing of illegal dump site locations on the Torres Martinez Reservation is maintained by the United States Environmental Protection Agency, Region IX. These dump sites contain unlawfully discarded household waste such as landscaping and wood wastes with no known soil or groundwater contamination. A majority of the sites have already been cleaned up through the collaborative efforts of the EPA, The California Integrated Waste Management Board and the Torres Martinez Tribe.

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

APPENDIX B

Historical Aerial Photographs, Topographic Maps, Fire Insurance Map, City Directory, Physical Setting Report, Water Well Report, and Oil and Gas Well Report

Historical Aerial Photographs

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269581
Project #: D180359
Date: 12/7/2018

Target Property Summary

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

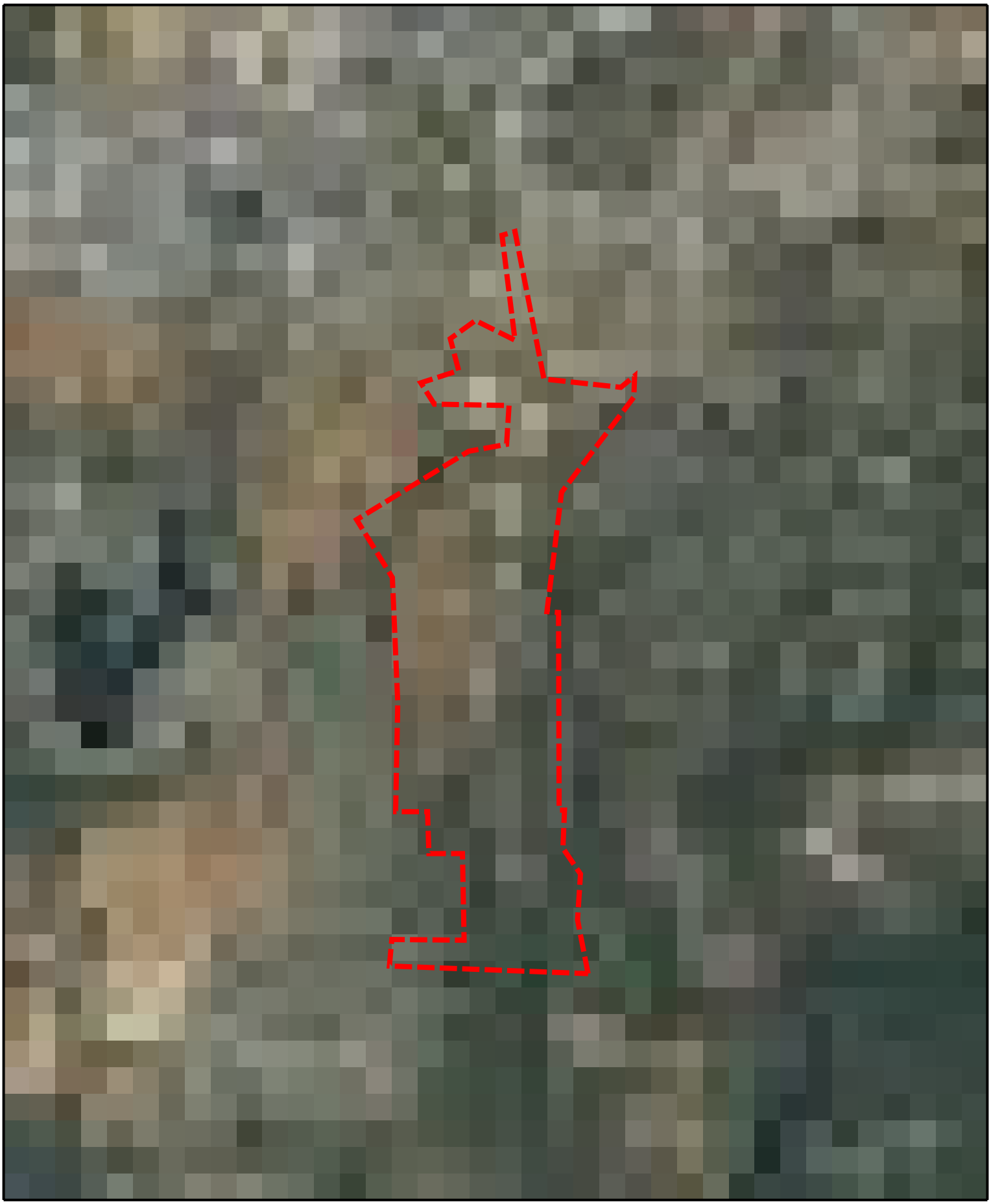
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Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
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Aerial Research Summary

Date	Source	Scale	Frame
2016	USDA	1" = 1000'	N/A
2014	USDA	1" = 1000'	N/A
2012	USDA	1" = 1000'	N/A
2010	USDA	1" = 1000'	N/A
2009	USDA	1" = 1000'	N/A
2006	USDA	1" = 1000'	N/A
2005	USDA	1" = 1000'	N/A
2004	USDA	1" = 1000'	N/A
05/09/1993	USGS	1" = 1000'	N/A
09/07/1984	NASA	1" = 1000'	3405-9638
06/26/1980	USGS	1" = 1000'	1-30
08/29/1975	USGS	1" = 1000'	1-150
07/31/1964	CAS	1" = 1000'	2-44
09/02/1952	ASCS	1" = 1000'	1-130
11/03/1946	USGS	1" = 1000'	3-34

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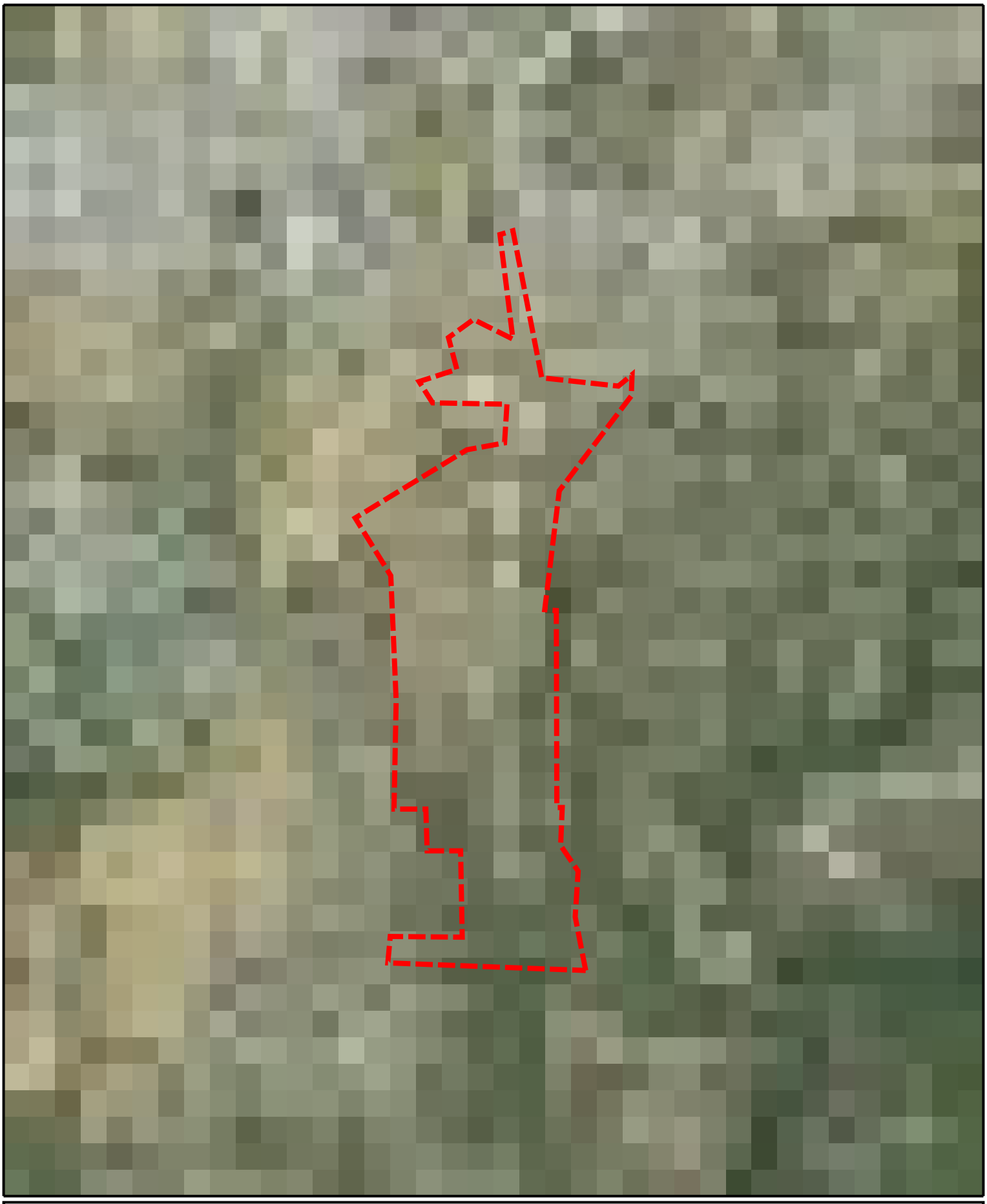


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Stonehenge Springs
USDA
2016

GeoSearch

JOB #: 269581 - 12/07/2018

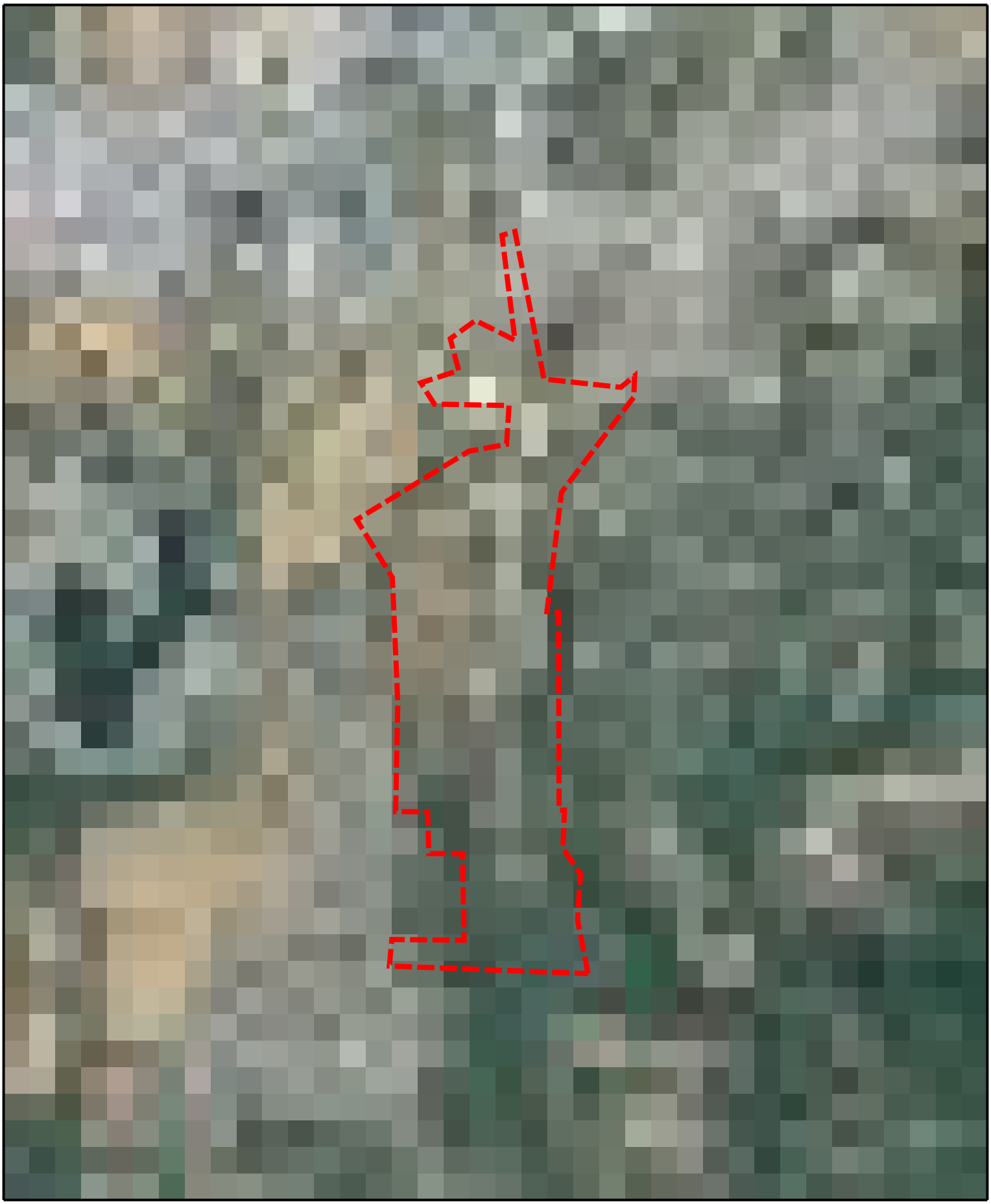


N
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Stonehenge Springs
USDA
2014

GeoSearch

JOB #: 269581 - 12/07/2018

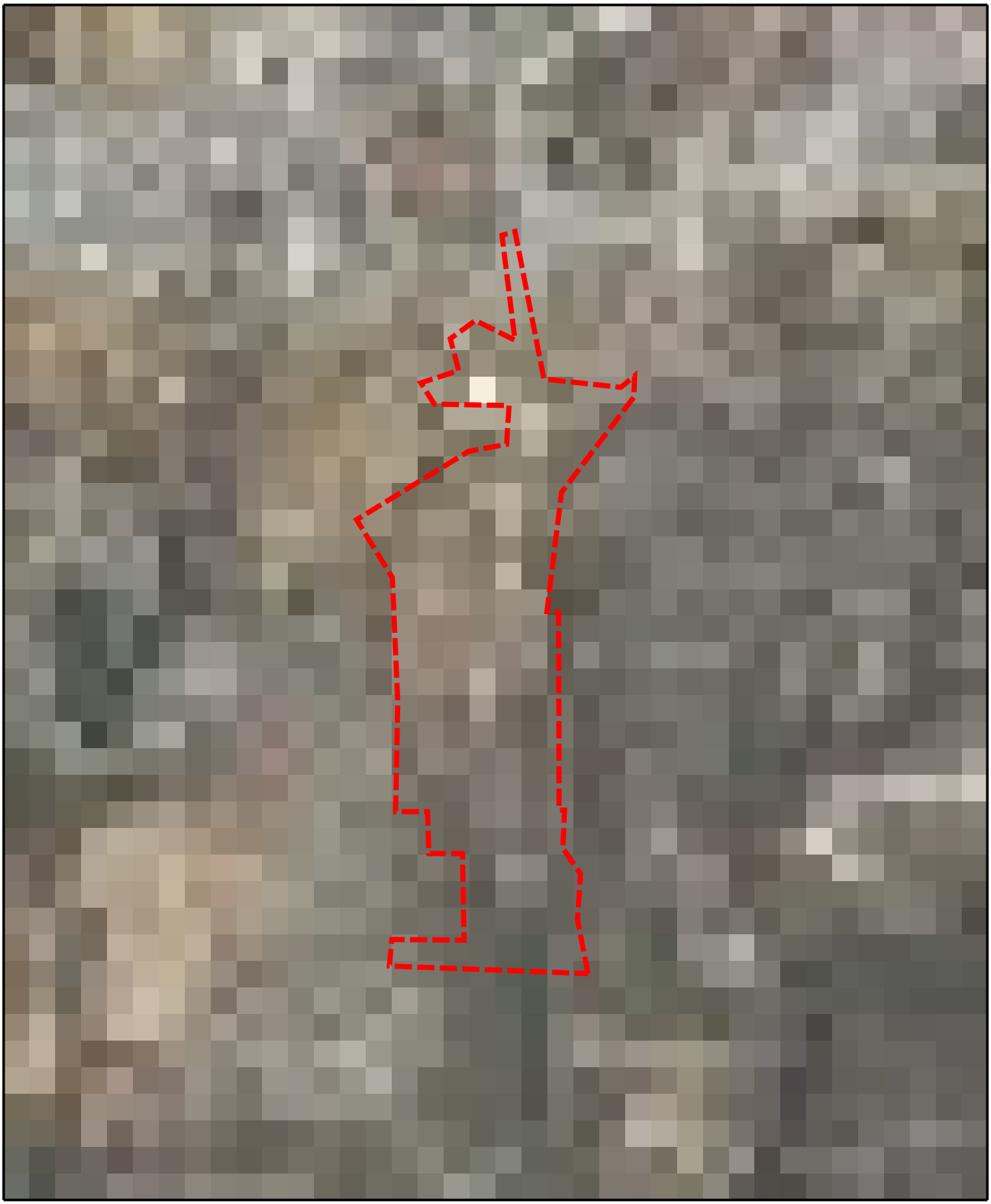


N
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Stonehenge Springs
USDA
2012

GeoSearch

JOB #: 269581 - 12/07/2018

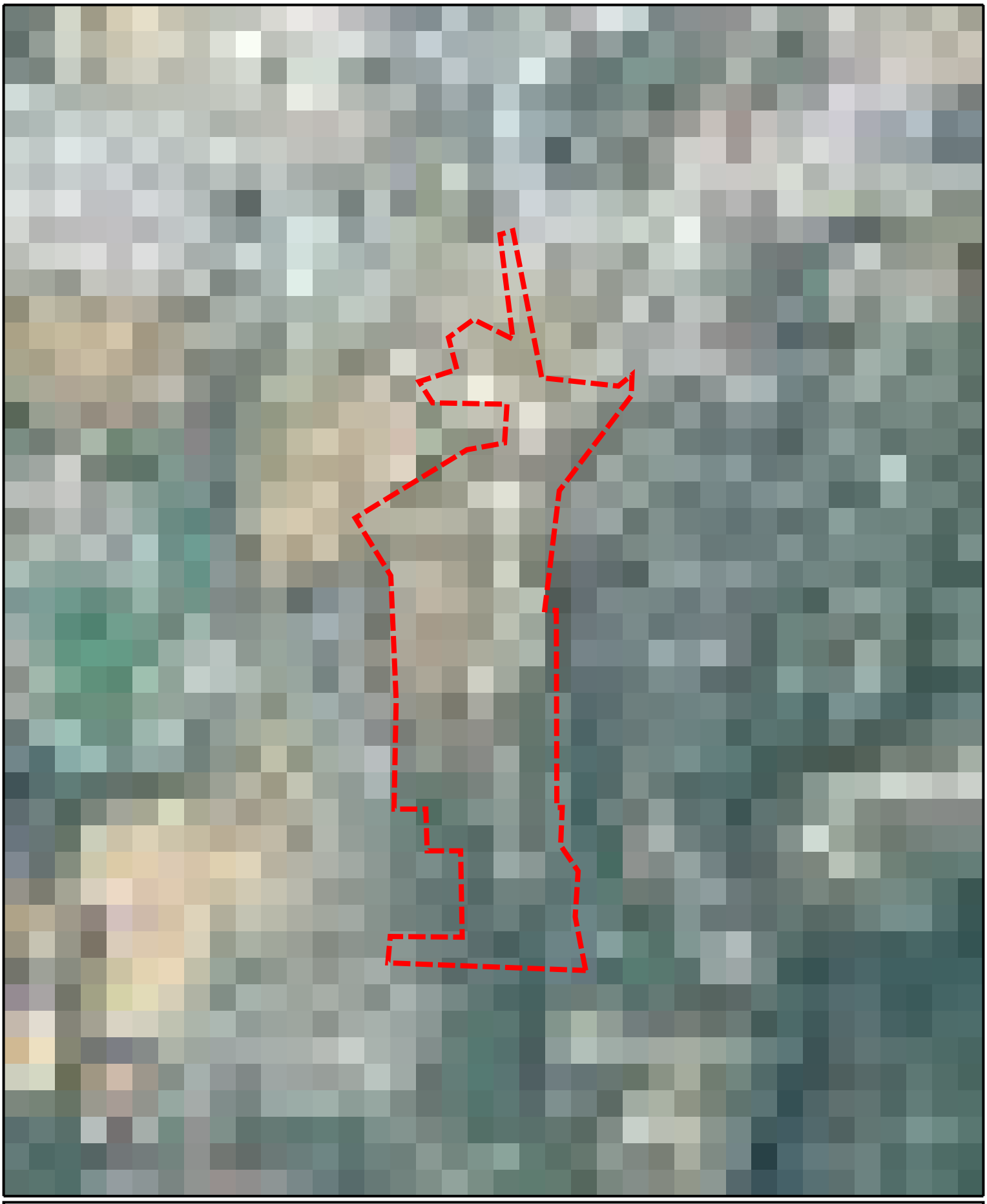


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Stonehenge Springs
USDA
2010

GeoSearch

JOB #: 269581 - 12/07/2018

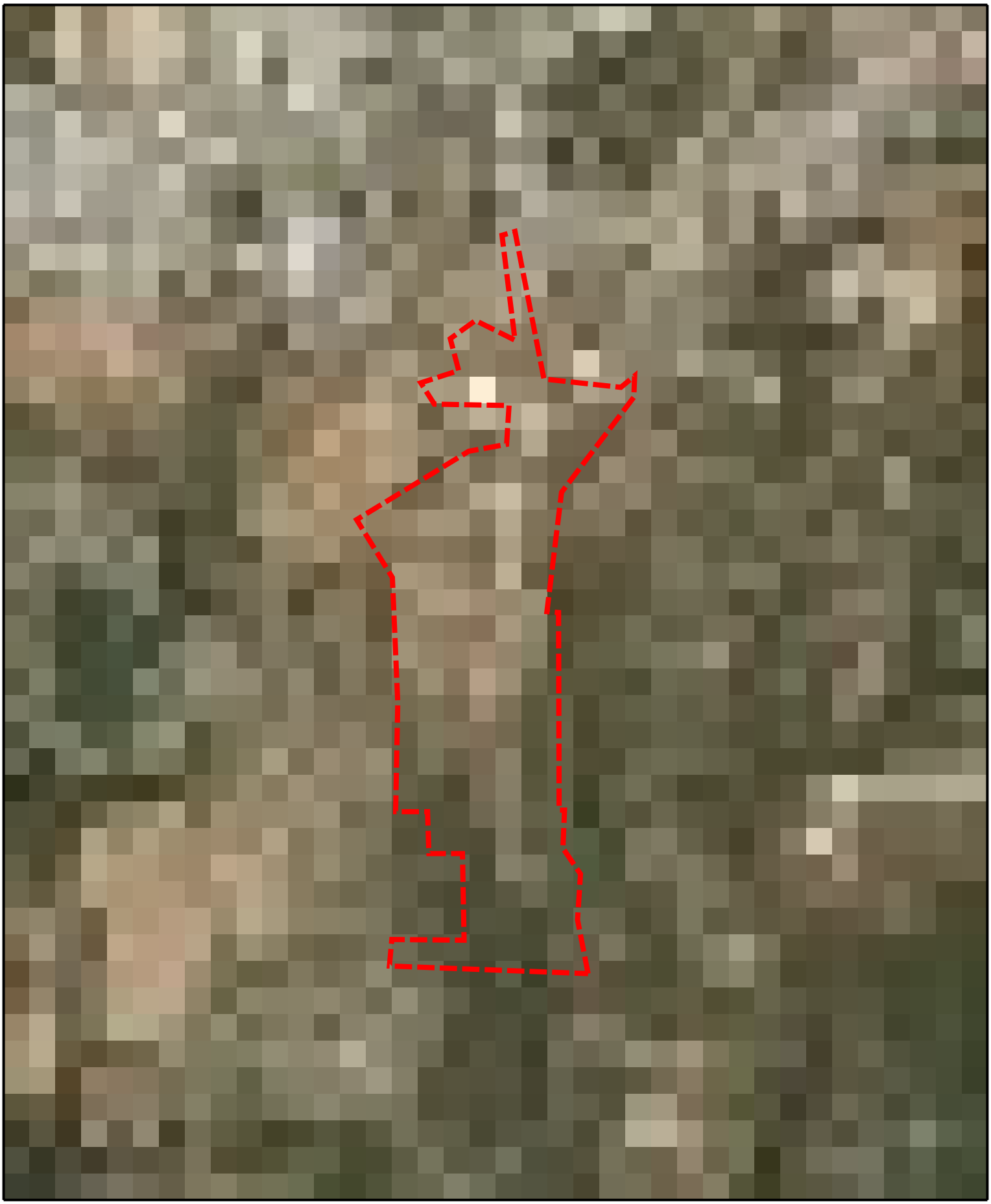


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Stonehenge Springs
USDA
2009

GeoSearch

JOB #: 269581 - 12/07/2018

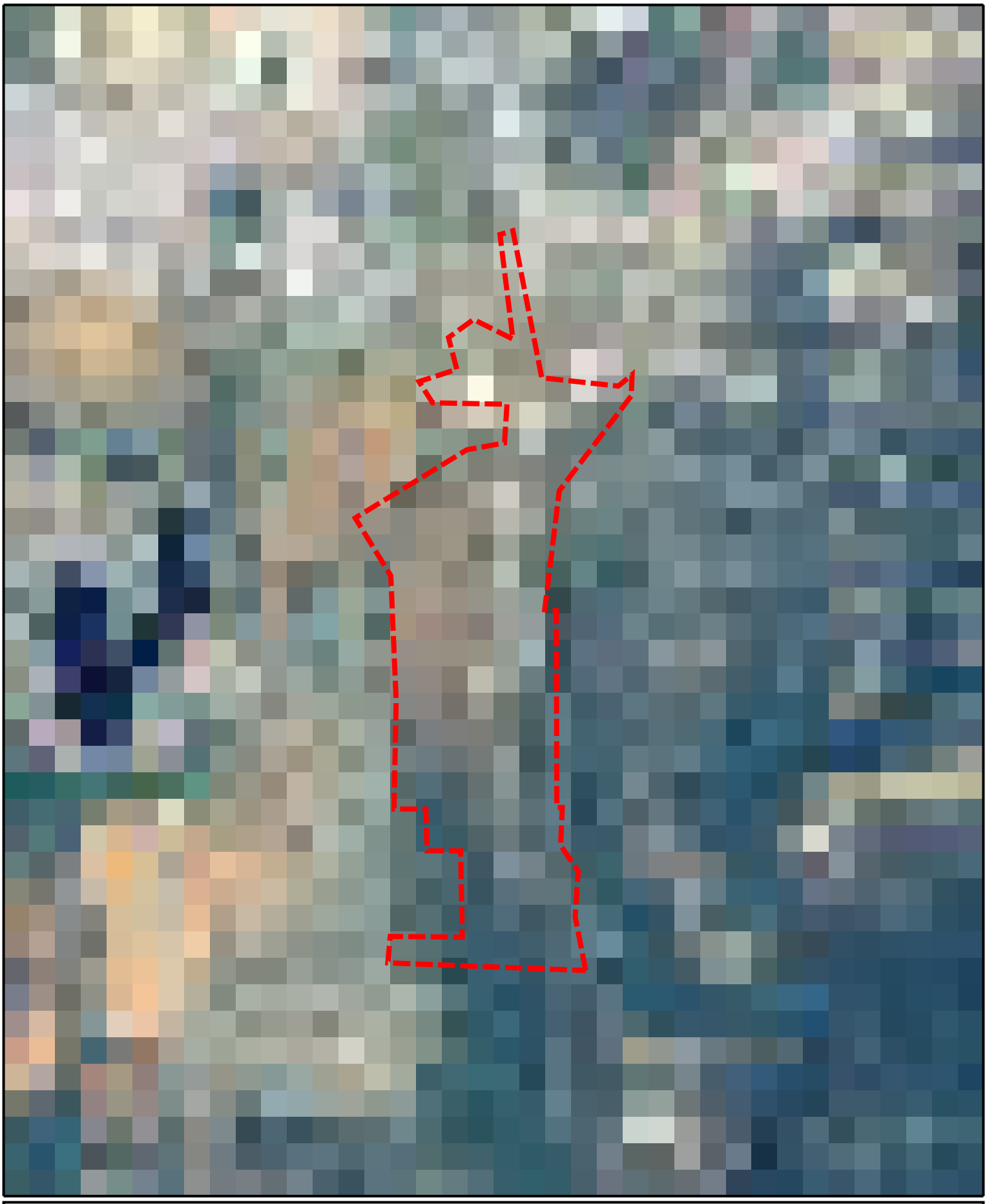


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Stonehenge Springs
USDA
2006

GeoSearch

JOB #: 269581 - 12/07/2018

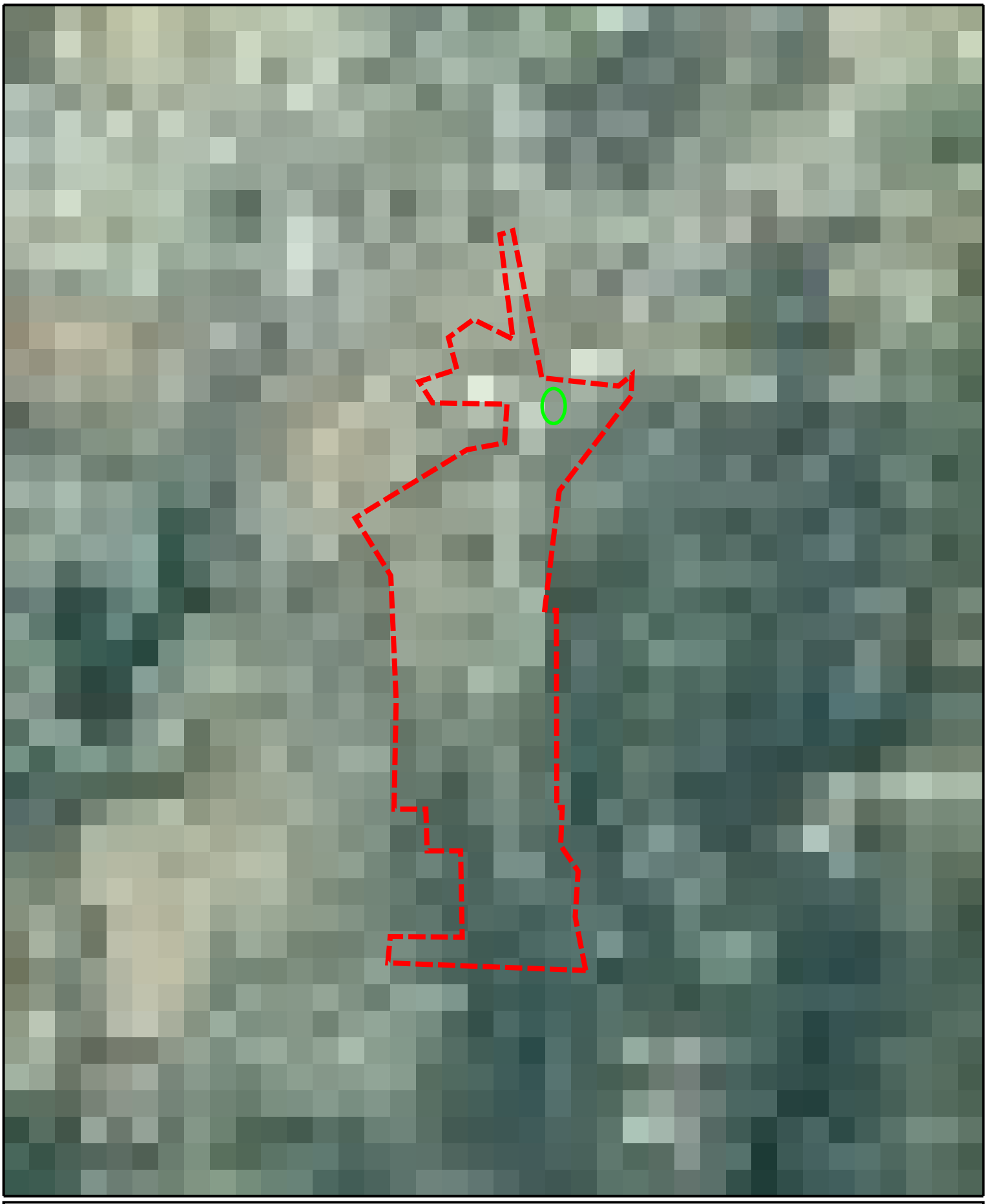


N
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Stonehenge Springs
USDA
2005

GeoSearch

JOB #: 269581 - 12/07/2018

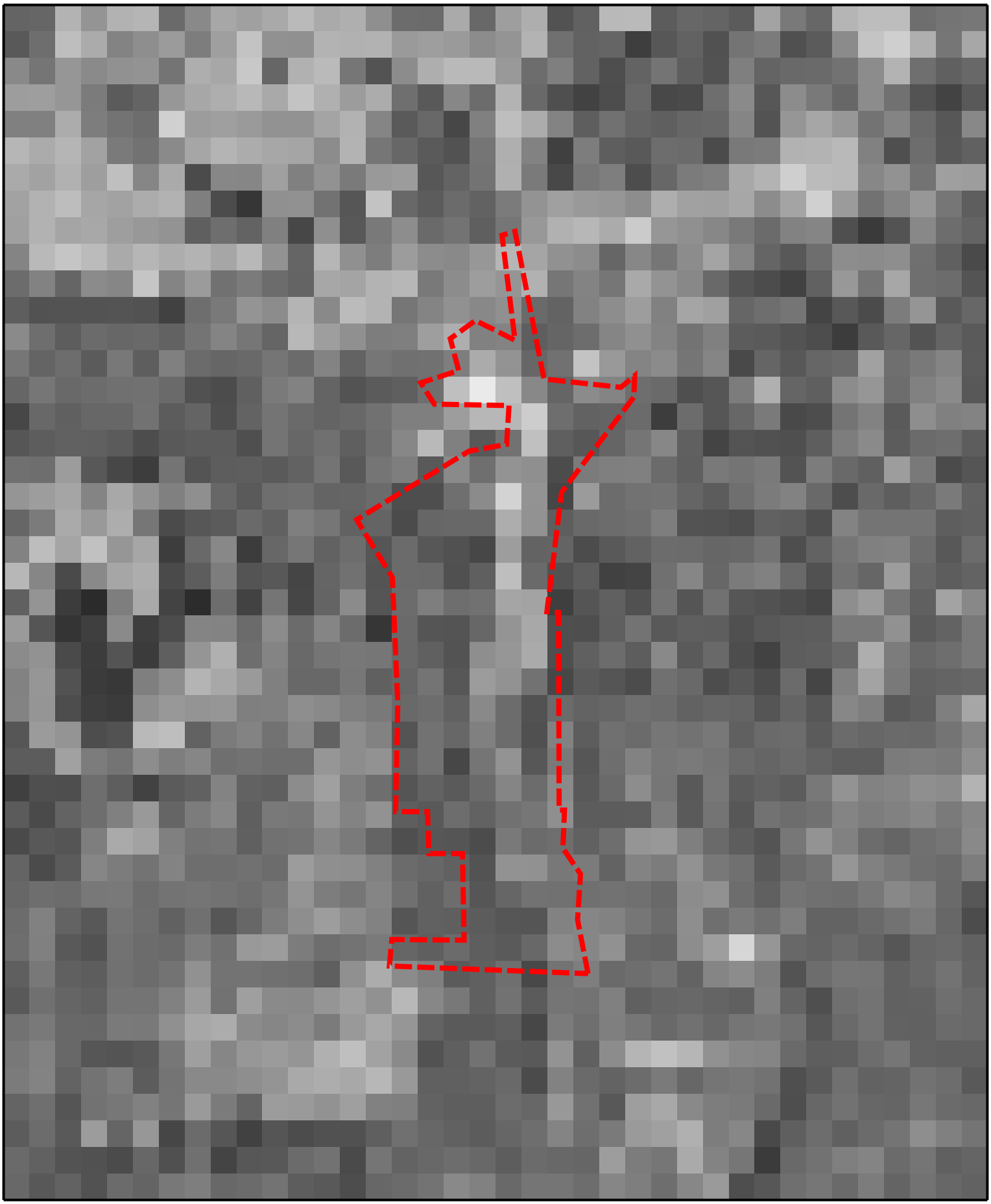


N
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Stonehenge Springs
USDA
2004

GeoSearch

JOB #: 269581 - 12/07/2018

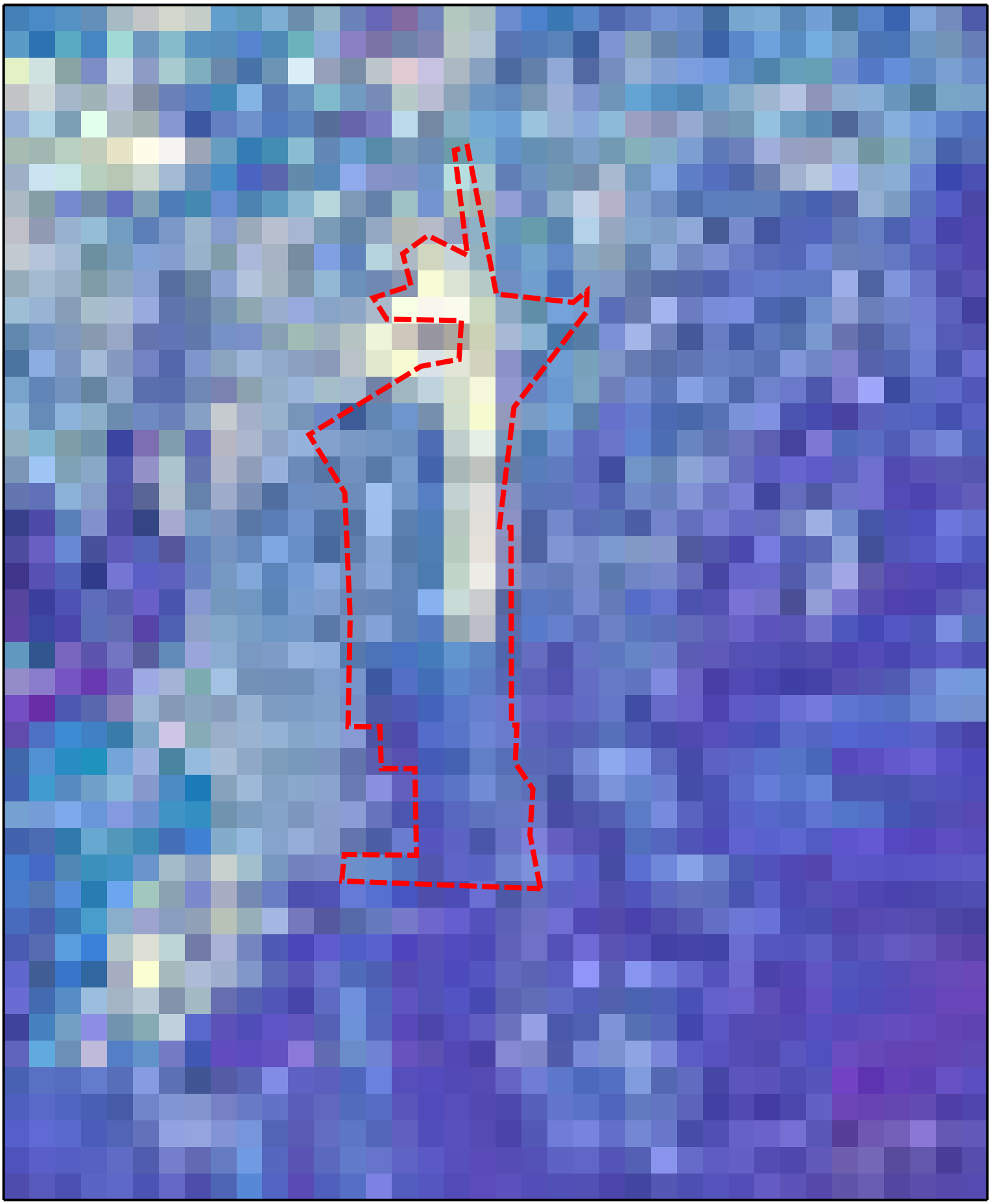


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Stonehenge Springs
USGS
05/09/1993

GeoSearch

JOB #: 269581 - 12/07/2018

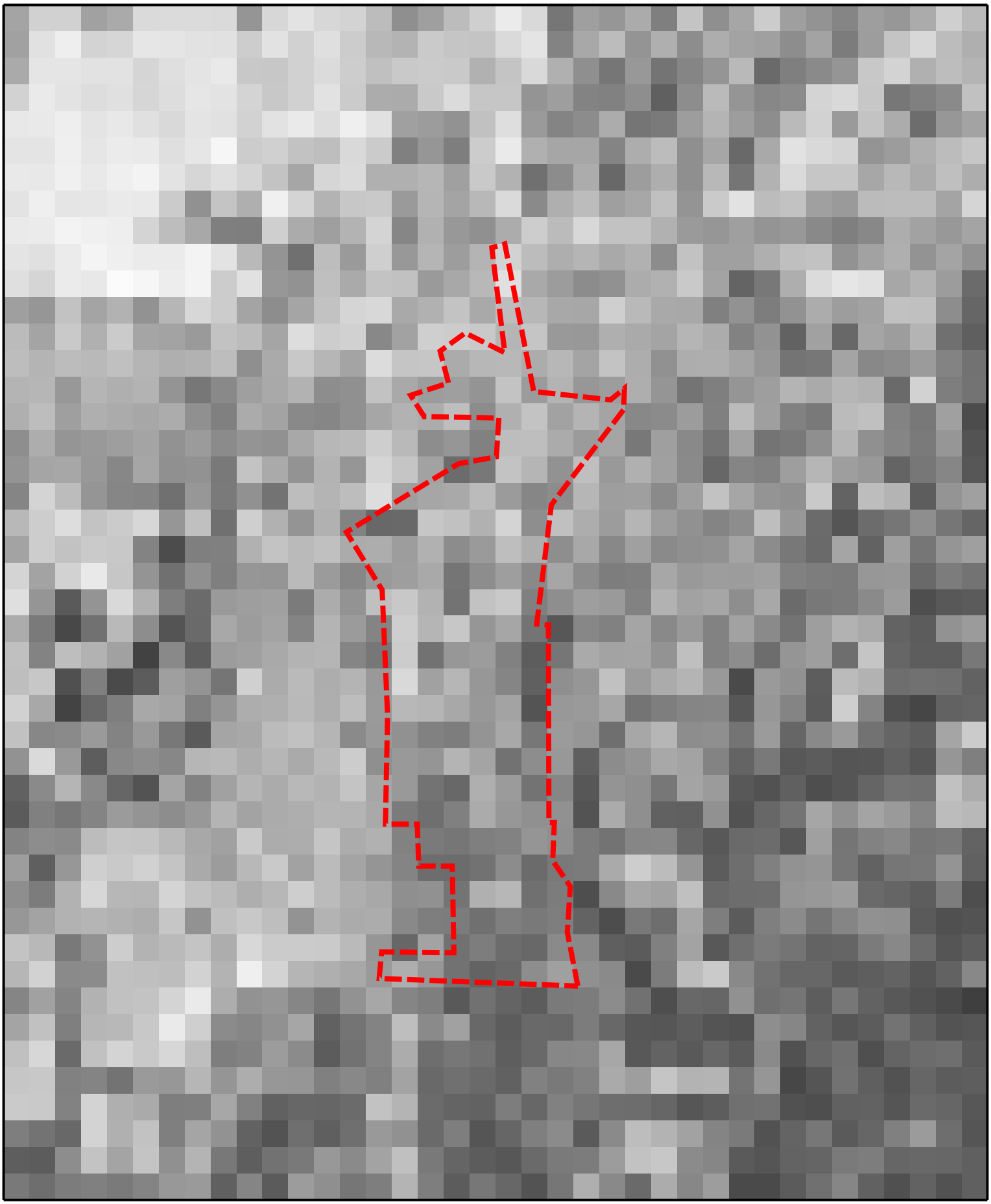


N
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Stonehenge Springs
NASA
09/07/1984

GeoSearch

JOB #: 269581 - 12/07/2018

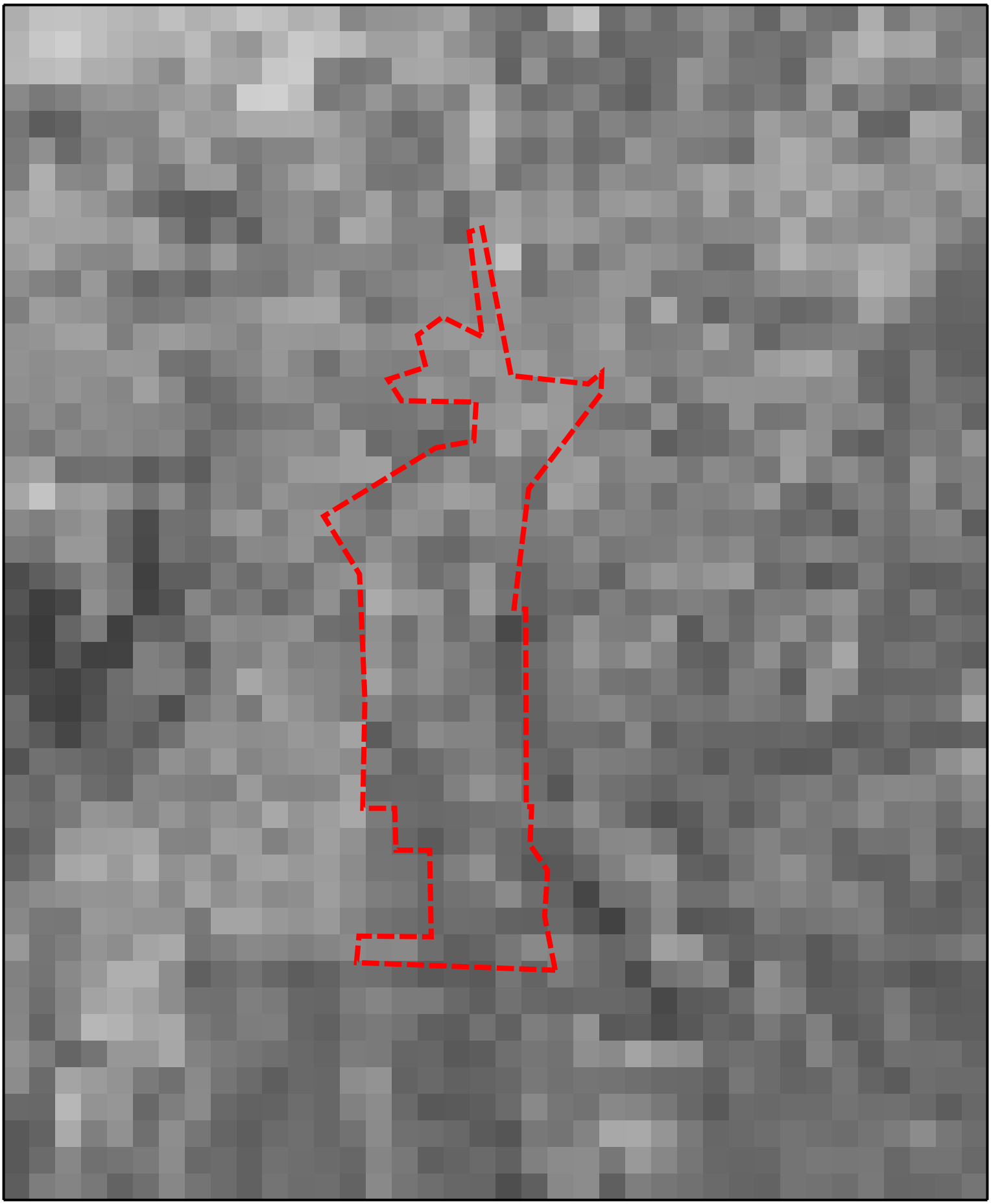


N
W E
S

Stonehenge Springs
USGS
06/26/1980

GeoSearch

JOB #: 269581 - 12/07/2018

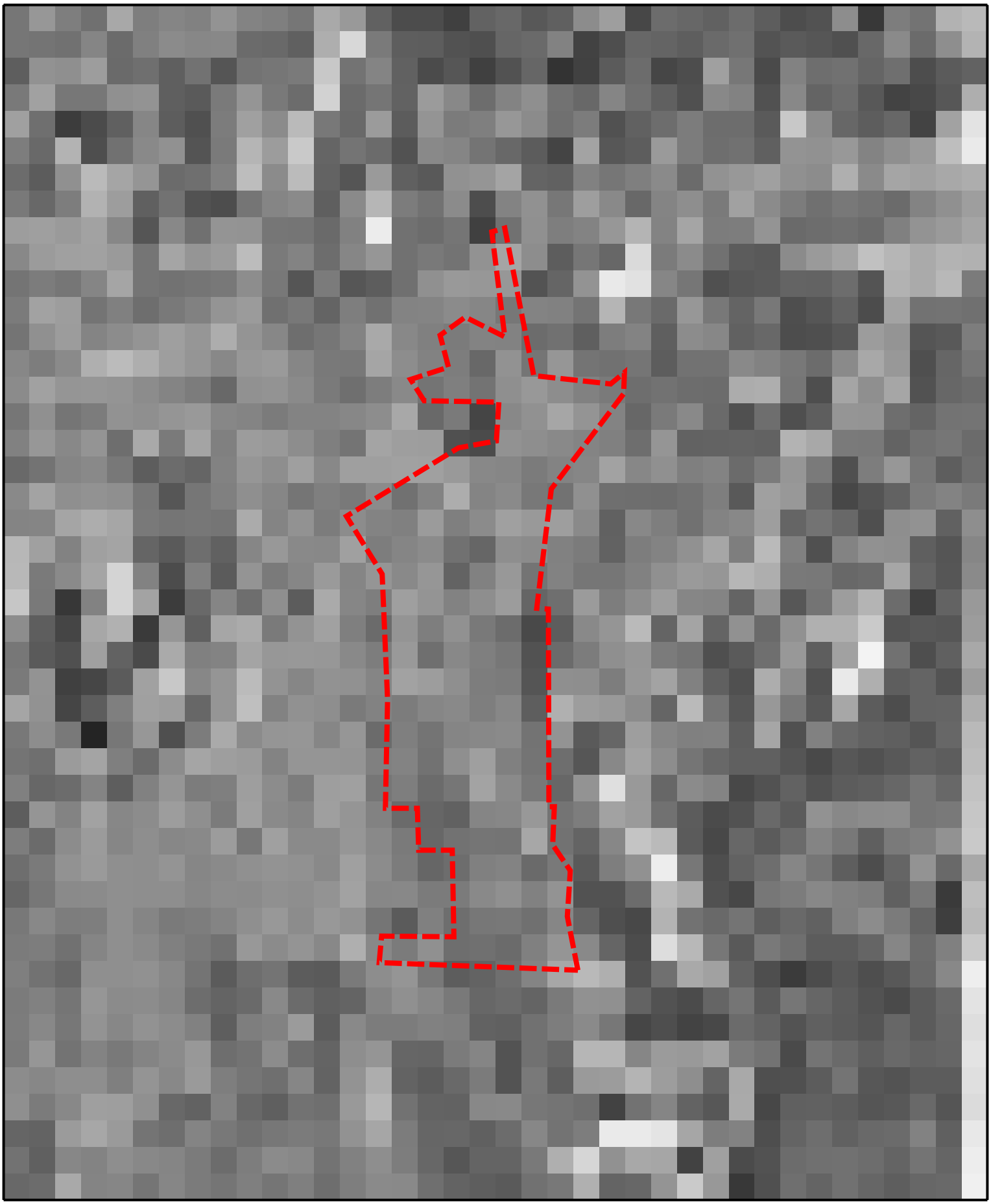


N
W E
S

Stonehenge Springs
USGS
08/29/1975

GeoSearch

JOB #: 269581 - 12/07/2018

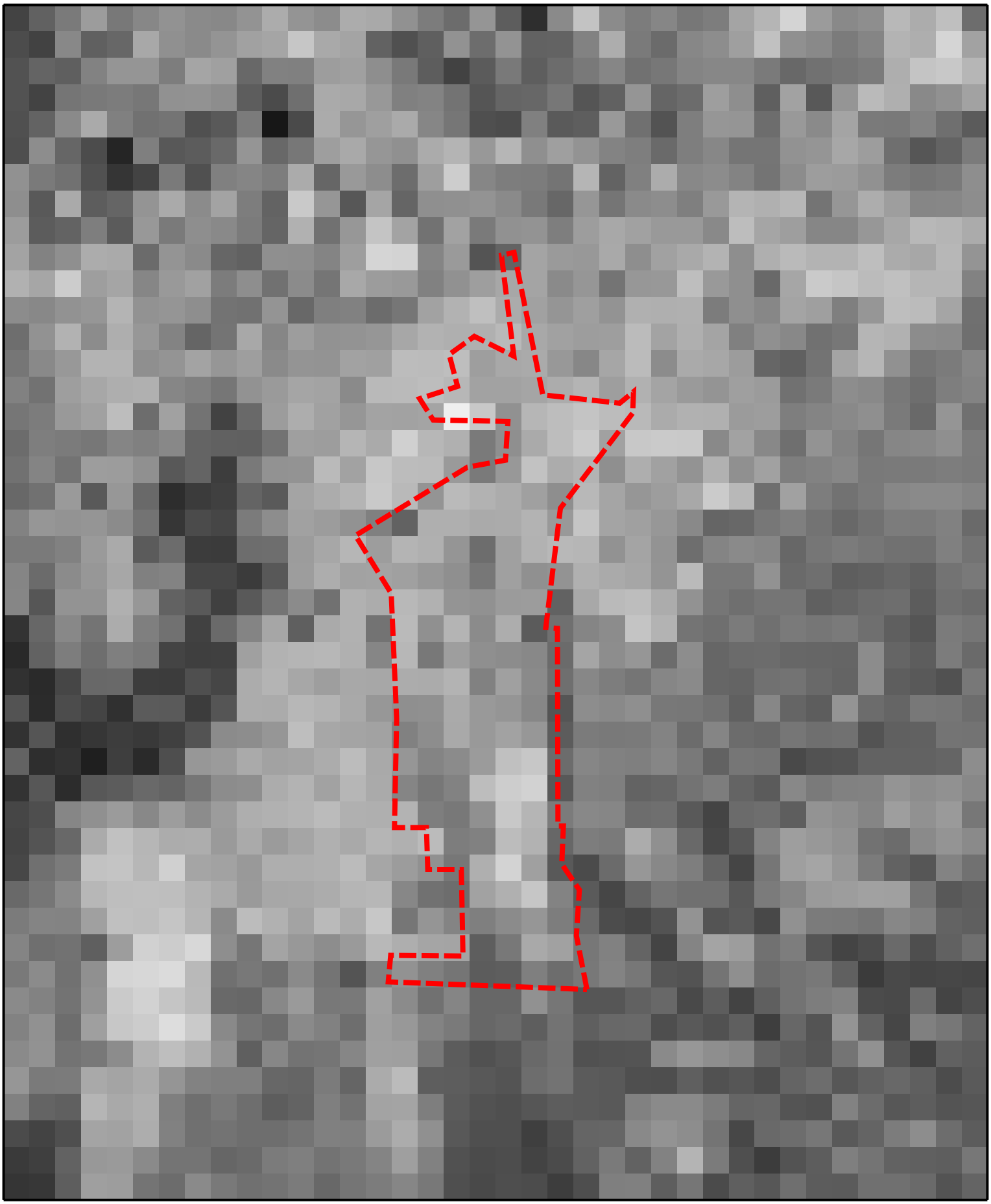


N
W E
S

Stonehenge Springs
CAS
07/31/1964

GeoSearch

JOB #: 269581 - 12/07/2018

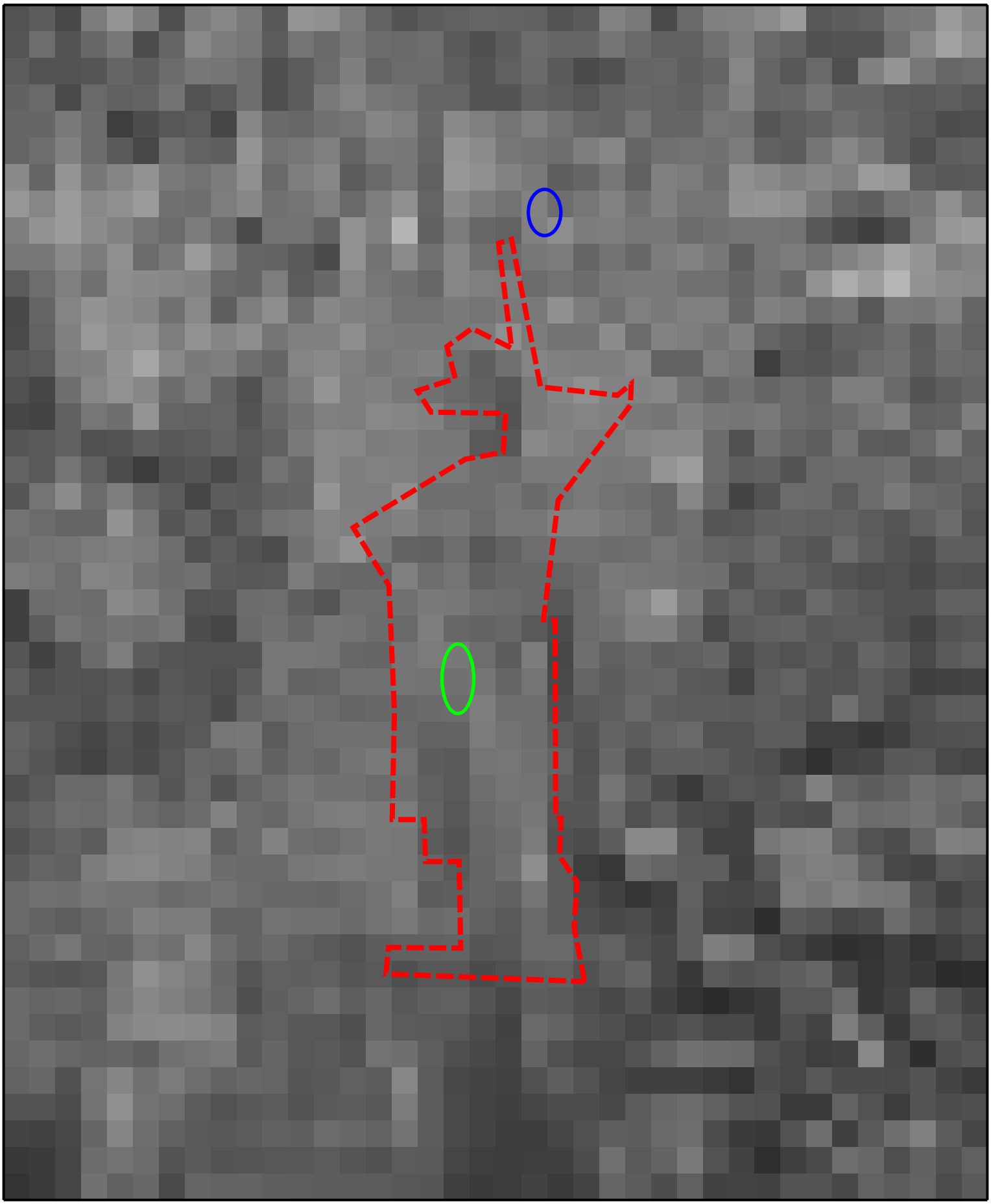


N
W E
S

Stonehenge Springs
ASCS
09/02/1952

GeoSearch

JOB #: 269581 - 12/07/2018



N
W E
S

Stonehenge Springs
USGS
11/03/1946

GeoSearch

JOB #: 269581 - 12/07/2018

Historical Topographic Maps

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269580
Project #: D180359
Date: 12/7/2018

Target Property Summary

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado, California 95619

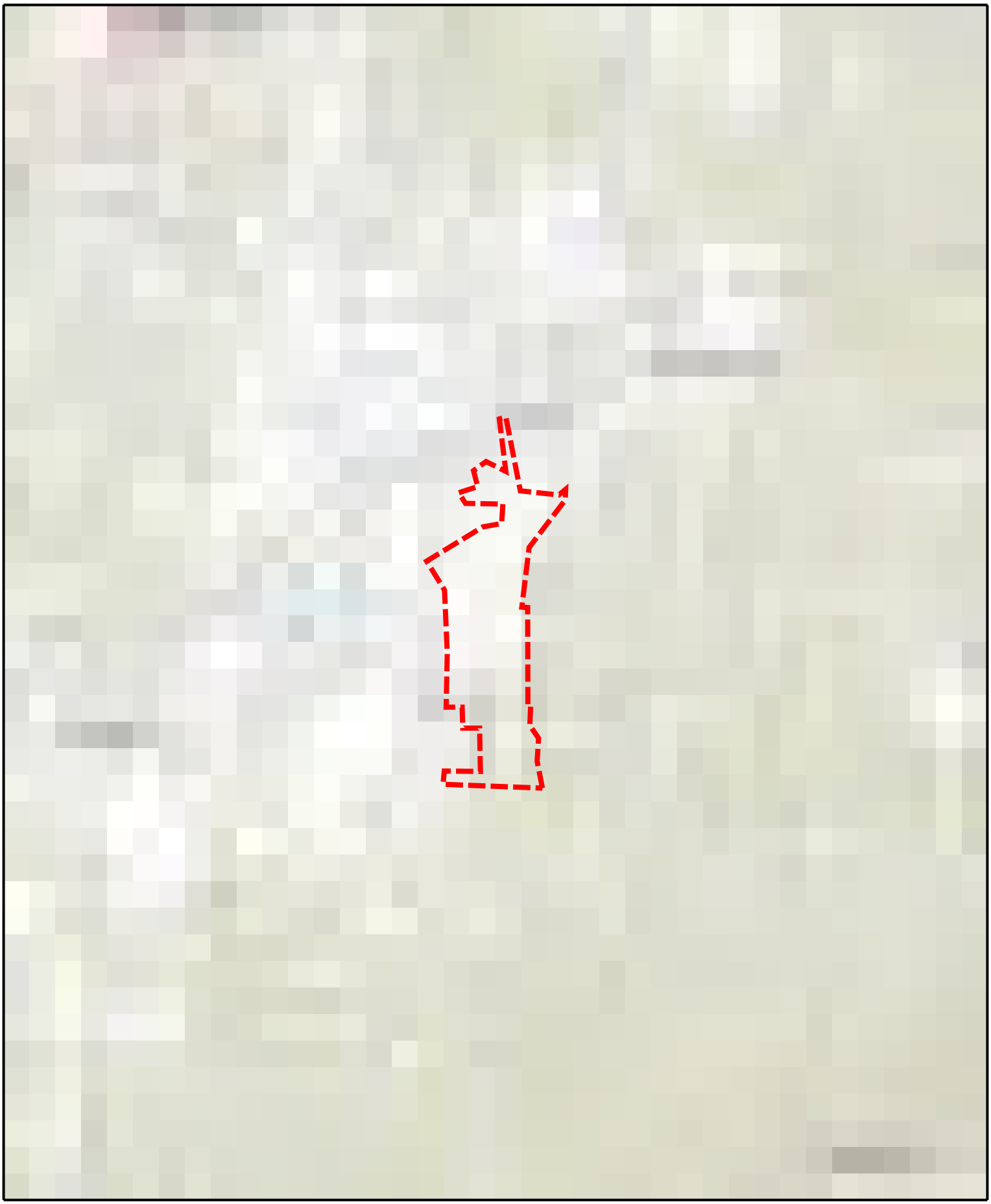
USGS Quadrangle: ***Placerville***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-120.816350834, 38.677359136), (-120.821951287, 38.677526651), (-120.821886914, 38.678112951), (-120.819848435, 38.678096199), (-120.819891350, 38.680005827), (-120.820835488, 38.680005827), (-120.820878403, 38.680927121), (-120.821779625, 38.680927121), (-120.821715252, 38.683322429), (-120.821865456, 38.686086146), (-120.822873967, 38.687359095), (-120.819719689, 38.688866505), (-120.818646805, 38.689017244), (-120.818582432, 38.689871428), (-120.820685284, 38.689904925), (-120.821071522, 38.690373884), (-120.819998639, 38.690641859), (-120.820234673, 38.691345288), (-120.819526570, 38.691747245), (-120.818410771, 38.691311792), (-120.818775551, 38.693623014), (-120.818410771, 38.693706752), (-120.817595379, 38.690457626), (-120.815428154, 38.690273393), (-120.815041916, 38.690524620), (-120.815063374, 38.690055662), (-120.817101853, 38.687962063), (-120.817509549, 38.685332415), (-120.817187684, 38.685315666), (-120.817166226, 38.680960622), (-120.817016022, 38.680960622), (-120.817058938, 38.680123084), (-120.816565411, 38.679553552), (-120.816651242, 38.678548484)

Topographic Map Summary

Date	Quadrangle	Scale
2012	Placerville, CA	1" = 2000'
1949 PHOTOREVISED 1973	Placerville, CA	1" = 2000'
1950	Placerville, CA	1" = 2000'
1949	Placerville, CA	1" = 2000'
1893	Placerville, CA	1" = 10420'
1892	Placerville, CA	1" = 10420'
1891	Placerville, CA	1" = 10420'

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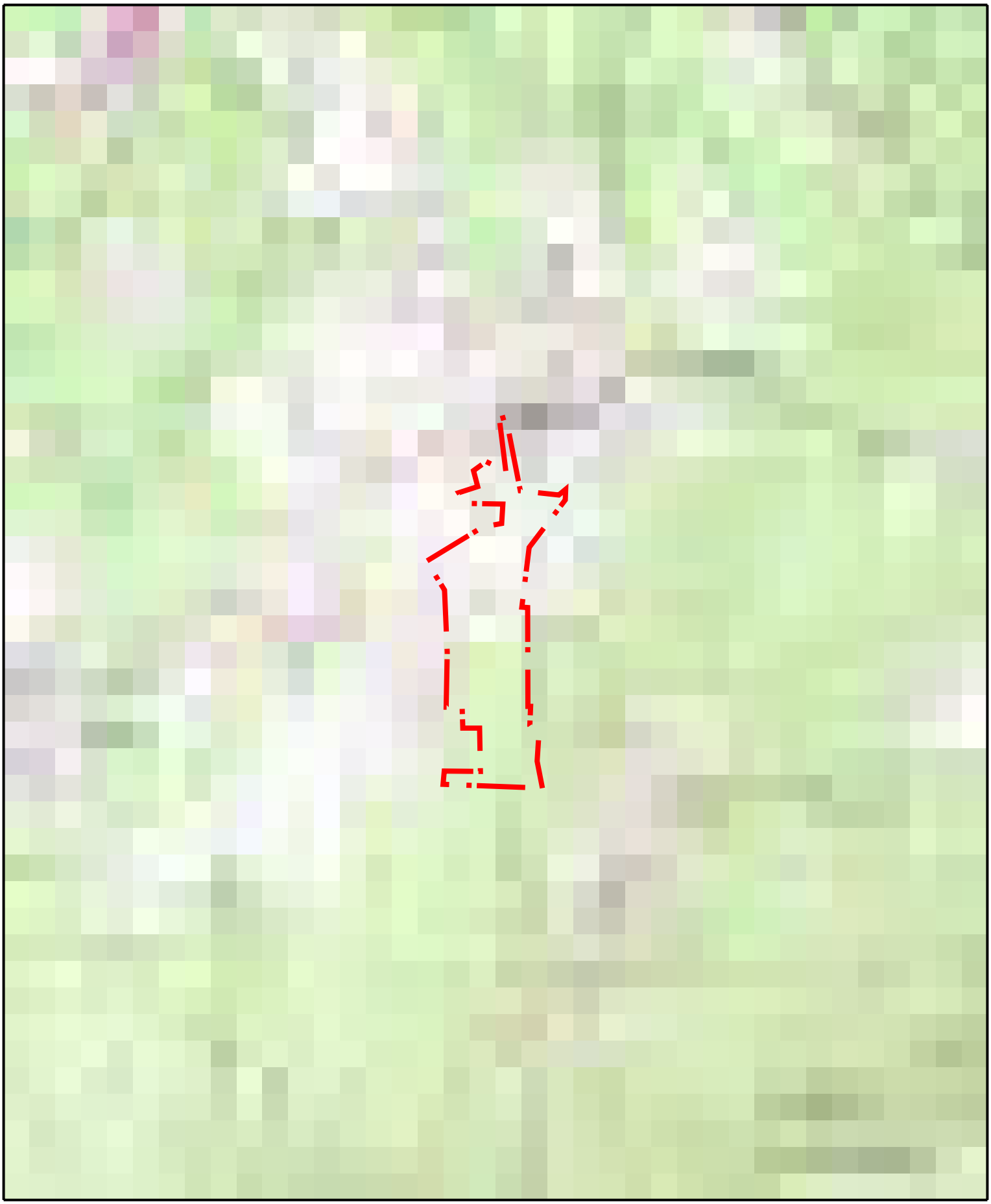


N
W E
S

Stonehenge Springs
Placerville, CA (2012)

GeoSearch

JOB #: 269580 - 12/07/2018

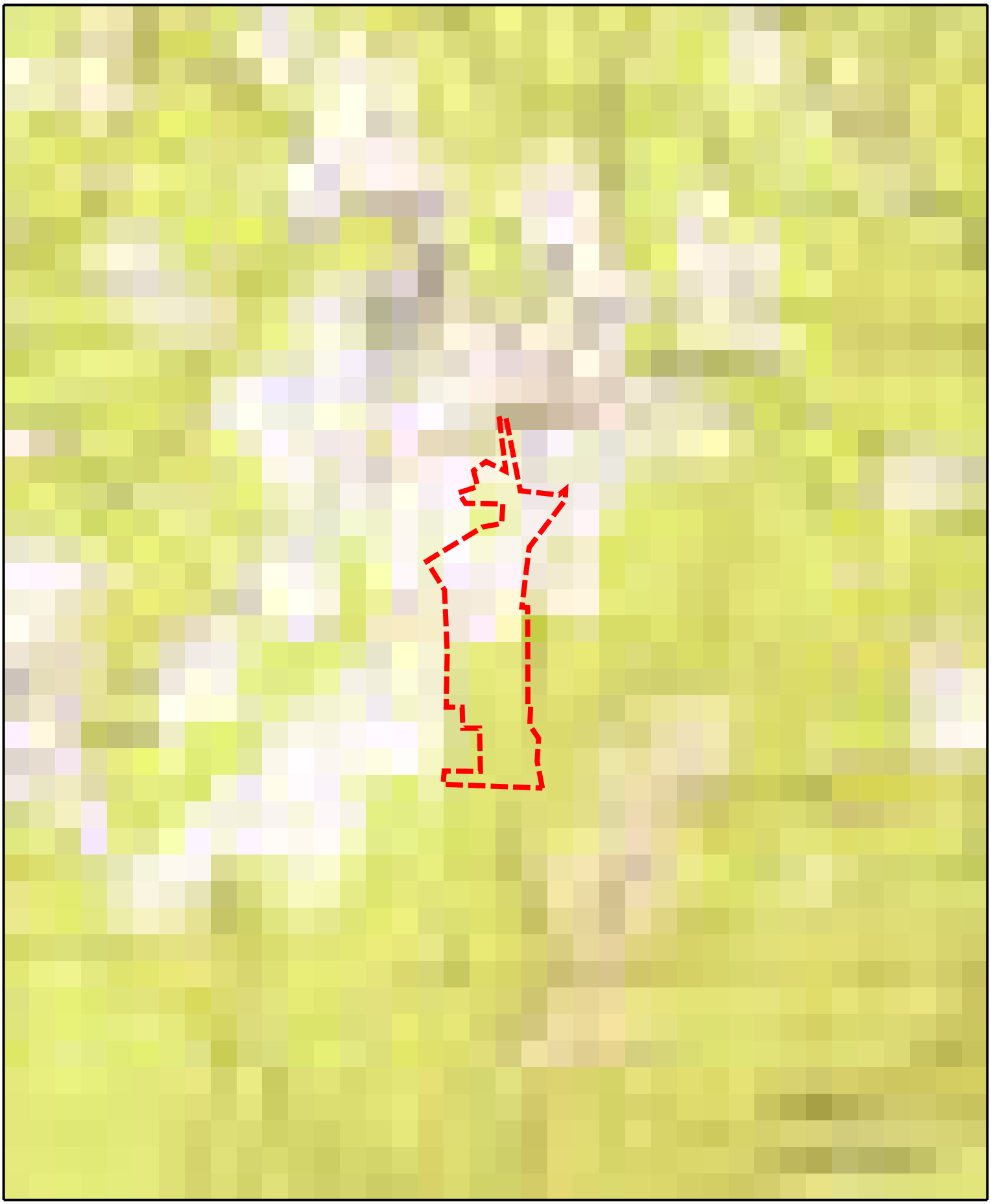


N
W E
S

Stonehenge Springs
Placerville, CA (1973)

GeoSearch

JOB #: 269580 - 12/07/2018

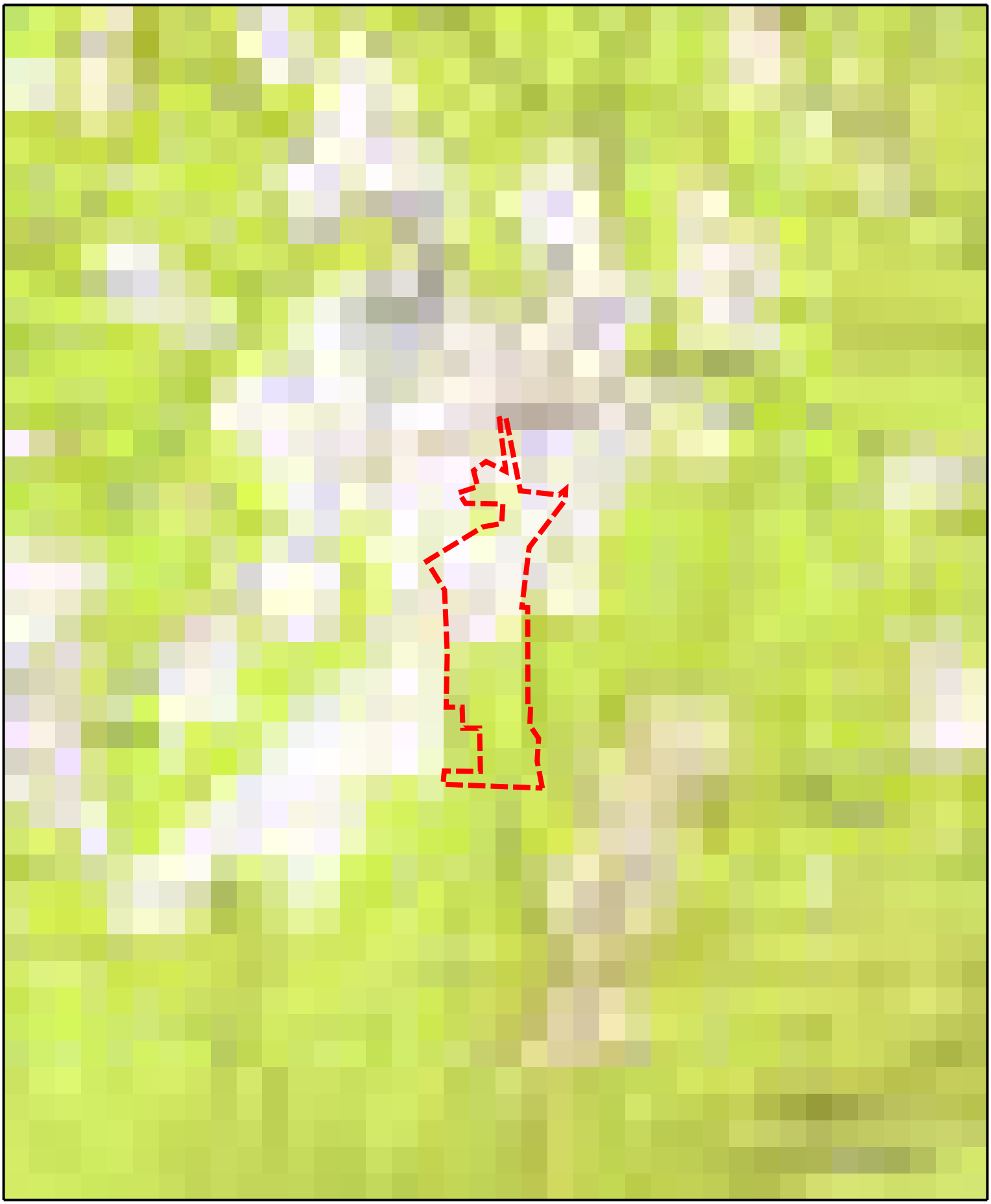


N
W E
S

Stonehenge Springs
Placerville, CA (1950)

GeoSearch

JOB #: 269580 - 12/07/2018



N
W E
S

Stonehenge Springs
Placerville, CA (1949)

GeoSearch

JOB #: 269580 - 12/07/2018

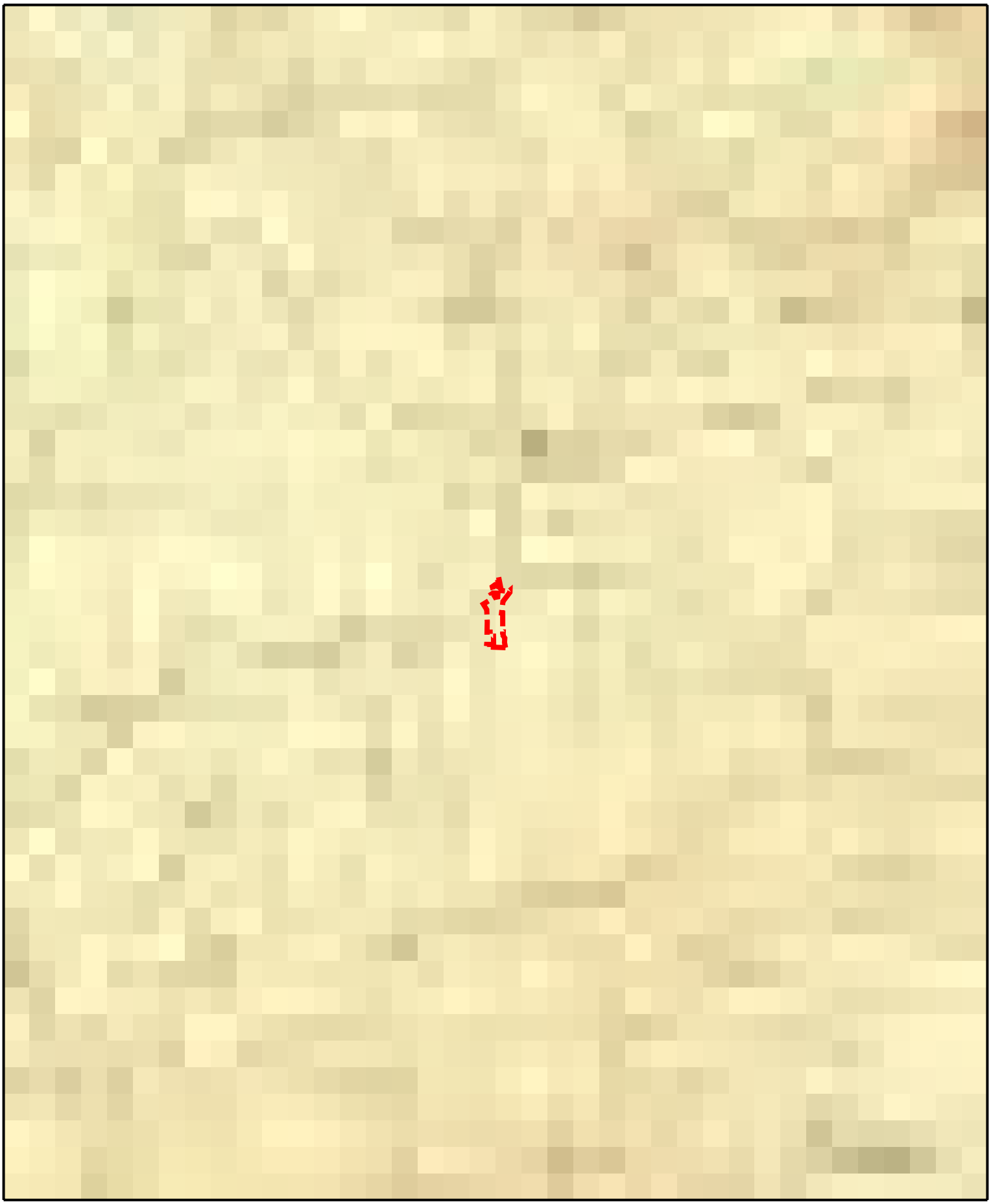


N
W E
S

Stonehenge Springs
Placerville, CA (1893)

GeoSearch

JOB #: 269580 - 12/07/2018

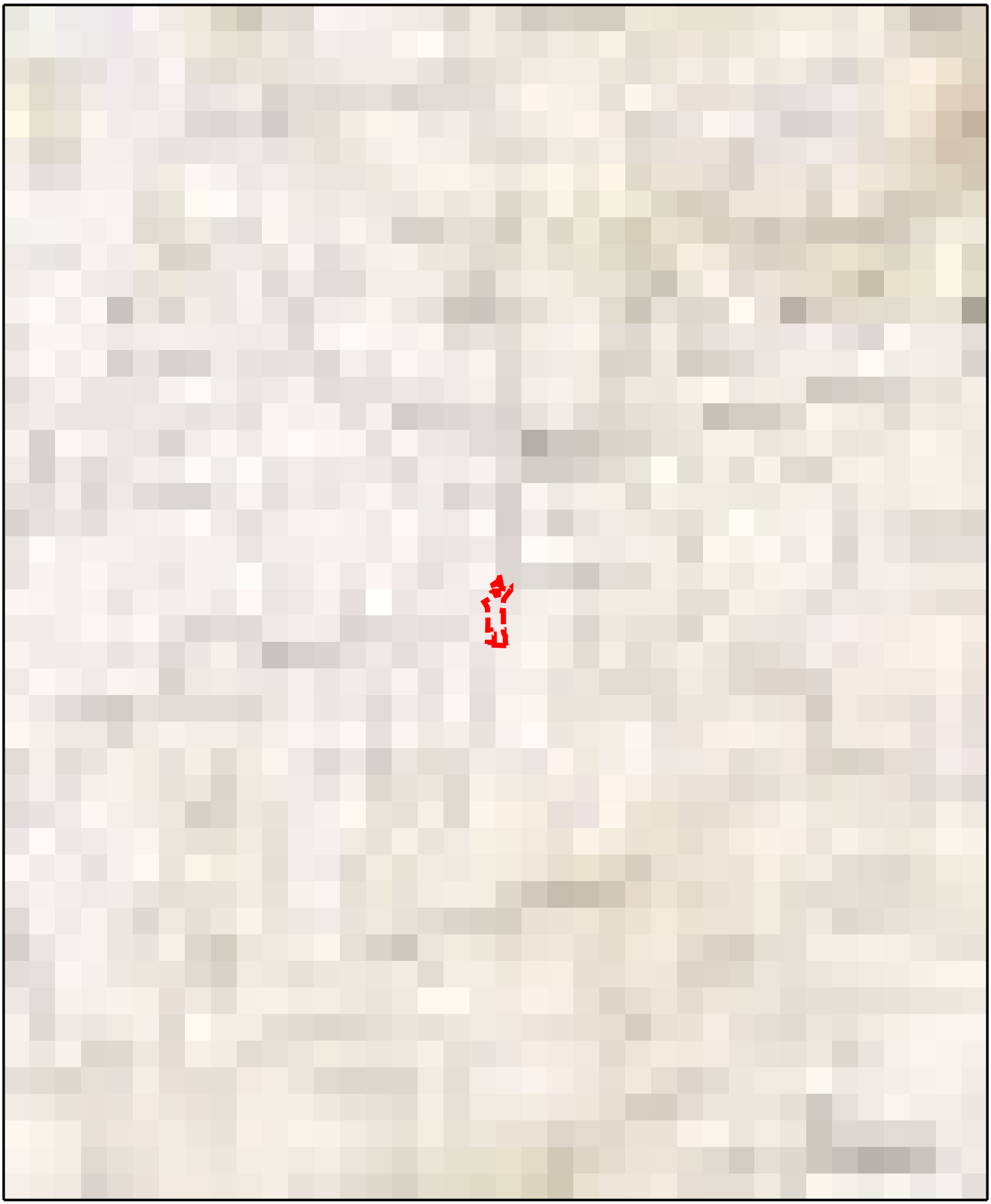


N
W E
S

Stonehenge Springs
Placerville, CA (1892)

GeoSearch

JOB #: 269580 - 12/07/2018



N
W E
S

Stonehenge Springs
Placerville, CA (1891)

GeoSearch

JOB #: 269580 - 12/07/2018



Target Property:

Stonehenge Springs

Faith Lane,
Diamond Springs, CA 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269584
Project #: D180359
Date #: 12/07/18

GeoSearch FIM

Date: 12/07/18

GS Job Number: 118699

Company Name: Environmental Science Assoc-San Francisco

Project Number: D180359

Site Information: Stonehenge Springs
Faith Lane,
Diamond Springs, CA 95619

The collections of fire insurance maps listed below were reviewed according to the site information supplied by client. Based on the information provided, no coverage is available.

Library of Congress
University Publications of America
Other Libraries (universities, state, local, etc.).

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City Directory Target Property Address

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Target Property Address

Faith Ln, Diamond Springs, CA 95619

1 FAITH LN

2016	STREET NOT LISTED	INFOUSA	SOUTH WEST
2011	STREET NOT LISTED	INFOUSA	PACIFIC
2006	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

Comment:

Historical By Street Number

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Historical by Street Number

1 Faith Ln	No Listing (2002/03-2016)

Comments:

City Directory Standard Report

Target Property:

Faith Ln,

Diamond Springs, CA 95619

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

INFOUSA

SOUTH WEST	2016	**FAITH LN**	
		1	STREET NOT LISTED

INFOUSA

PACIFIC	2011	**FAITH LN**	
		1	STREET NOT LISTED

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB)	2006	**FAITH LN**	
		1	STREET NOT LISTED

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB)	2002-03	**FAITH LN**	
		1	STREET NOT LISTED

Comment:

City Directory Target Property Address

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Target Property Address

Pleasant Valley Rd, Diamond Springs, CA 95828

1 PLEASANT VALLEY RD

2016	STREET BEGINS	INFOUSA	SOUTH WEST
2011	STREET BEGINS	INFOUSA	PACIFIC
2002-03	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1980	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	STREET BEGINS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1970	STREET NOT LISTED	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

98 PLEASANT VALLEY RD

1985	HARSHFIELD COLLIN F	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

118 PLEASANT VALLEY RD

1985	HEDGECOCK C	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

130 PLEASANT VALLEY RD

2016	TOWER MART	INFOUSA	SOUTH WEST
2011	CAB SERVICES	INFOUSA	PACIFIC
2011	TOWER MART	INFOUSA	PACIFIC
2002-03	TOWER MART	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TOWER MART	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

1995-96	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	FOOD&LIQUOR	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
202 PLEASANT VALLEY RD			
2011	ASCHE BONNIE	INFOUSA	PACIFIC
1990	CARSTEN D	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
273 PLEASANT VALLEY RD			
2016	CREATIVE PHOTO FRAMES	INFOUSA	SOUTH WEST
2011	CREATIVE PHOTO FRAMES	INFOUSA	PACIFIC
2006	CREATIVE PHOTO FRAMES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	HARRINGTON PATRICIA	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	CRAETIVE PHOTO FRAMES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HARRINGTON P	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	CREATIVE PHOTO FRME	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
300 PLEASANT VALLEY RD			
1990	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
320 PLEASANT VALLEY RD			
2002-03	PARISEK JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
321 PLEASANT VALLEY RD			
2016	DAWSON OIL CO	INFOUSA	SOUTH WEST
2011	DAWSON OIL CO	INFOUSA	PACIFIC

2006	DAWSON OIL CO	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	DAWSON OIL CO	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	APARTMENTS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	X [COMMERCE WAY INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

350 PLEASANT VALLEY RD

2016	WESTWOOD MOBILE HOME COMMUNITY	INFOUSA	SOUTH WEST
2011	WESTWOOD MOBILE HOME COMMUNITY	INFOUSA	PACIFIC
2006	MULTI TENANT RESIDENTIAL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	WESTWOOD MOBILE HOME COMMUNITY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [WRANGLER RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	Y [COMMERCE WAY INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	WESTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1980	WERSTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

1977	MULTI TENANT RESIDENTIAL	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WERSTWOOD MBL HMS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WESTWD MBL HM CMNTY	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

373 PLEASANT VALLEY RD

2016	D & D SUPPLY	INFOUSA	SOUTH WEST
2011	D & D SUPPLY	INFOUSA	PACIFIC
2006	D & D PLUMBNG	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	D&B PLUMBING SUPPLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	D & D SUPPLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	X [MISSOURI FLAT RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1990	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

385 PLEASANT VALLEY RD

2016	INDEPENDENCE HIGH SCHOOL	INFOUSA	SOUTH WEST
2016	INDEPENDENCE LEARNING CTR	INFOUSA	SOUTH WEST
2011	INDEPENDENCE HIGH SCHOOL	INFOUSA	PACIFIC
2011	INDEPENDENCE LEARNING CENTER	INFOUSA	PACIFIC
2006	ELDRDO ADULT SCHOOL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [MIISOURI FLAT RD INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

424 PLEASANT VALLEY RD

2011	TIRAPELLE L	INFOUSA	PACIFIC
2006	TIRAPELLI L	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2002-03	TIRAPELLE L	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	TIRAPELLI L	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	TIRAPELLE L	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
435 PLEASANT VALLEY RD			
2016	MOUER LABS	INFOUSA	SOUTH WEST
2011	SUNRISE FAMILY MEDICINE	INFOUSA	PACIFIC
2006	BACK ON TRACK COUNSELING SERV	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MCCUNE CAROLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MCCUNE CAROLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	YUBACOIN INC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
443 PLEASANT VALLEY RD			
2002-03	LASHER WM	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	LASHER WM	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
444 PLEASANT VALLEY RD			
2002-03	PARKER JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
460 PLEASANT VALLEY RD			
2016	DEB'S FROSTY	INFOUSA	SOUTH WEST
2006	DEB'S FROSTY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	X [CHINA GARDEN INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2002-03	DEB'S FROSTY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	SMITH ELAIDA	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
461 PLEASANT VALLEY RD			
2006	TAYLOR THOMAS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TAYLOR THOMAS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
466 PLEASANT VALLEY RD			
1980	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	WEINAND KENT MRS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
470 PLEASANT VALLEY RD			
2002-03	BONANZA CARPET CLEANING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
478 PLEASANT VALLEY RD			
2002-03	DIAMOND TV&SATELLITE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
484 PLEASANT VALLEY RD			
2016	GREEN SPERO	INFOUSA	SOUTH WEST
2011	TAYLOR CLIFF A DC	INFOUSA	PACIFIC
2011	TAYLOR JOHN F	INFOUSA	PACIFIC
2006	BUILDING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	ALTERBATIVE HEALING ALLIANCE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	AZTECA BAKERY & MARKET	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2006	BAHAI CENTER	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	CARLA'S LIKE YOUR STYLE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND SPRINGS MOBILITY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND TV & SATELLITE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DIAMOND VILLAGE CHIROPRACTIC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	DUIVAS FITNESS FOR WOMEN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	ELDRO HUMANE SOCIETY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	FACTORY TEAM 2 RCNG MTR SPRTS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	FINE LINE TATOOING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	INALLIANCE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MAIN STREET MAIL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	MCCULLCH MIKIO A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR CLIFF A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR CLIFF A DC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR JOHN DR DIAMOND V C	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	TAYLOR JOHN F	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)

2006	X [HOWARD CIR INTS]	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	ALMOST ANTIQUES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	BARGAIN BARIN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	CARLENE'S	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	DOWNTOWN DOLLS	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	ELDRO HUMANE SOCIETY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HAIR BY KIMBERLY	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	HIGH MOUNTAIN BLUE WATER TCKL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	IRON MOUNTAIN MOTORCYCLES	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	KNIGHT VIRGIL	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	KNIGHT'S MUSIC	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MOUNATIN MAIL 2	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	MULLEN MIKE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2002-03	TAYLOR JOHN	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
1995-96	IMAGES LIFE PHOTO	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1995-96	JACKS CABINETS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

1990	JACKS CABINETS	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1985	LARSEN H CABINET	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
493 PLEASANT VALLEY RD			
2016	HAIR AFFAIR	INFOUSA	SOUTH WEST
2016	J & J JAVA	INFOUSA	SOUTH WEST
2016	LANDIS TOBY Y PHD	INFOUSA	SOUTH WEST
2011	CHARLOTTE'S BAKERY & CAFE	INFOUSA	PACIFIC
2011	HAIR AFFAIR	INFOUSA	PACIFIC
2011	LANDIS TOBY Y PHD	INFOUSA	PACIFIC
2002-03	DIAMOND ESORESSO&MORE	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
500 PLEASANT VALLEY RD			
2016	FIRE HOUSE CAFE	INFOUSA	SOUTH WEST
2011	FIREHOUSE CAFE	INFOUSA	PACIFIC
501 PLEASANT VALLEY RD			
2002-03	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
504 PLEASANT VALLEY RD			
2006	HANSEN DENISE D LCSW	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
2006	VENDERKAR PEF MA MPA MFT	HAINES DIRECTORY	SACRAMENTO EAST(CITY & SUBURB)
515 PLEASANT VALLEY RD			
1995-96	ROHLFING FRANK	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1990	ROHLFING FRANK	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

517 PLEASANT VALLEY RD

1985	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

538 PLEASANT VALLEY RD

1980	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)
1977	NO CURRENT LISTING	HAINES DIRECTORY	SACRAMENTO (CITY & SUBURBAN)

Comment: No coverage for Diamond Springs prior to 1970.

Historical By Street Number

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

City Directory Historical by Street Number

1 Pleasant Valley Rd	No Listing (1970); Street Begins (1977-2002/03); No Listing (2006); Street Begins (2011-2016)
118 Pleasant Valley Rd	No Listing (1970-1980); Hedgecock C (1985); No Listing (1990-2016)
130 Pleasant Valley Rd	No Listing (1970-1985); Food&Liquor (1990); No Current Listing (1995/96); Tower Mart (2002/03); No Listing (2006); Cab Services (2011); Tower Mart (2011-2016)
202 Pleasant Valley Rd	No Listing (1970-1985); Carsten D (1990); No Listing (1995/96-2006); Asche Bonnie (2011); No Listing (2016)
273 Pleasant Valley Rd	No Listing (1970-1990); Creative Photo Frme (1995/96-2016); Harrington P (2002/03-2006)
300 Pleasant Valley Rd	No Listing (1970-1980); No Current Listing (1985-1990); No Listing (1995/96-2016)
320 Pleasant Valley Rd	No Listing (1970-1995/96); Parisek John (2002/03); No Listing (2006-2016)
321 Pleasant Valley Rd	No Listing (1970-1995/96); Dawson Oil Co (2002/03-2016); Westwood Mbl Hms (2002/03); Apartments (2002/03)
350 Pleasant Valley Rd	No Listing (1970); Multi Tenant Residential (1977); Werstwood Mbl Hms (1977-1995/96); Westwd Mbl Hm Cmnty (1977); No Listing (2002/03); Multi Tenant Residential (2006); Westwood Mbl Hms (2006); Westwood Mobile Home Community (2006-2016)
373 Pleasant Valley Rd	No Listing (1970-1985); No Current Listing (1990); No Listing (1995/96); D&B Plumbing Supply (2002/03-2016)
385 Pleasant Valley Rd	No Listing (1970-2002/03); Eldrdo Adult School (2006); Independence High School (2011-2016)
424 Pleasant Valley Rd	No Listing (1970-1985); Tirapelle L (1990-2011); No Listing (2016)
435 Pleasant Valley Rd	No Listing (1970-1995/96); Mccune Carole (2002/03-2006); Yubacoin Inc (2002/03); Back On Track Counseling Serv (2006); Sunrise Family Medicine (2011); Mouer Labs (2016)
443 Pleasant Valley Rd	No Listing (1970-1990); Lasher Wm (1995/96-2002/03); No Listing (2006-2016)
444 Pleasant Valley Rd	No Listing (1970-1995/96); Parker John (2002/03); No Listing (2006-2016)
460 Pleasant Valley Rd	No Listing (1970-1995/96); Deb's Frosty (2002/03-2006); Smith Elaida (2002/03); No Listing (2011); Deb's Frosty (2016)
461 Pleasant Valley Rd	No Listing (1970-1995/96); Taylor Thomas (2002/03-2006); No Listing (2011-2016)
466 Pleasant Valley Rd	No Listing (1970); Weinand Kent Mrs (1977); No Current Listing (1980); No Listing (1985-2016)
470 Pleasant Valley Rd	No Listing (1970-1995/96); Bonanza Carpet Cleaning (2002/03); No Listing (2006-2016)
478 Pleasant Valley Rd	No Listing (1970-1995/96); Diamond Tv&Satellite (2002/03); No Listing (2006-2016)

484 Pleasant Valley Rd	No Listing (1970-1980); Larsen H Cabinet (1985); Jacks Cabinets (1990-1995/96); Images Life Photo (1995/96); Almost Antiques (2002/03); Bargain Barin (2002/03); Carlene's (2002/03); Downtown Dolls (2002/03); Eldro Humane Society (2002/03-2006); Hair By Kimberly (2002/03); High Mountain Blue Water Tckl (2002/03); Iron Mountain Motorcycles (2002/03); Knight Virgil (2002/03); Knight's Music (2002/03); Mounatin Mail 2 (2002/03); Mullen Mike (2002/03); Taylor John (2002/03); Building (2006); Alterbative Healing Alliance (2006); Azteca Bakery & Market (2006); Bahai Center (2006); Carla's Like Your Style (2006); Diamond Springs Mobility (2006); Diamond Village Chiropractic (2006); Duivas Fitness For Women (2006); Factory Team 2 Rcng Mtr Sprts (2006); Fine Line Tatooing (2006); Inalliance (2006); Main Street Mail (2006); Mccullch Mikio A Dc (2006-2011); Taylor John Dr Diamond V C (2006-2011); Green Spero (2016)
493 Pleasant Valley Rd	No Listing (1970-1995/96); Diamond Esoresso&More (2002/03); No Listing (2006); Charlotte's Bakery & Cafe (2011); Hair Affair (2011-2016); Landis Toby Y Phd (2011-2016); J & J Java (2016)
500 Pleasant Valley Rd	No Listing (1970-2006); Firehouse Cafe (2011-2016)
501 Pleasant Valley Rd	No Listing (1970-1995/96); No Current Listing (2002/03); No Listing (2006-2016)
504 Pleasant Valley Rd	No Listing (1970-2002/03); Hansen Denise D Lcsw (2006); Venderkar Pef Ma Mpa Mft (2006); No Listing (2011-2016)
515 Pleasant Valley Rd	No Listing (1970-1985); Rohlfing Frank (1990-1995/96); No Listing (2002/03-2016)
517 Pleasant Valley Rd	No Listing (1970-1980); No Current Listing (1985); No Listing (1990-2016)
538 Pleasant Valley Rd	No Listing (1970); No Current Listing (1977-1980); No Listing (1985-2016)
98 Pleasant Valley Rd	No Listing (1970-1980); Harshfield Collin F (1985); No Listing (1990-2016)

Comments: No coverage for Diamond Springs prior to 1970.

City Directory Standard Report

Target Property:

Pleasant Valley Rd,

Diamond Springs, CA 95828

Prepared For:
Environmental Science Assoc-San Francisco

Order #: 118699

Project #: D180359

Date: 12/11/2018

INFOUSA

SOUTH WEST	2016	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		130	TOWER MART
		273	CREATIVE PHOTO FRAMES
		321	DAWSON OIL CO
		350	WESTWOOD MOBILE HOME COMMUNITY
		373	D & D SUPPLY
		385	INDEPENDENCE HIGH SCHOOL
		385	INDEPENDENCE LEARNING CTR
		435	MOUER LABS
		460	DEB'S FROSTY
		484	GREEN SPERO
		493	HAIR AFFAIR
		493	J & J JAVA
		493	LANDIS TOBY Y PHD
		500	FIRE HOUSE CAFE

INFOUSA

PACIFIC	2011	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		130	CAB SERVICES
		130	TOWER MART
		202	ASCHE BONNIE
		273	CREATIVE PHOTO FRAMES
		321	DAWSON OIL CO
		350	WESTWOOD MOBILE HOME COMMUNITY
		373	D & D SUPPLY
		385	INDEPENDENCE HIGH SCHOOL
		385	INDEPENDENCE LEARNING CENTER
		424	TIRAPELLE L
		435	SUNRISE FAMILY MEDICINE
		484	TAYLOR CLIFF A DC

	484	TAYLOR JOHN F
	493	CHARLOTTE'S BAKERY & CAFE
	493	HAIR AFFAIR
	493	LANDIS TOBY Y PHD
	500	FIREHOUSE CAFE

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB) 2006 **PLEASANT VALLEY RD**

	273	CREATIVE PHOTO FRAMES
	273	HARRINGTON PATRICIA
	321	DAWSON OIL CO
	350	MULTI TENANT RESIDENTIAL
	350	WESTWOOD MBL HMS
	350	WESTWOOD MOBILE HOME COMMUNITY
	350	X [WRANGLER RD INTS]
	350	Y [COMMERCE WAY INTS]
	373	D & D PLUMBNG
	385	ELDRDO ADULT SCHOOL
	385	X [MIISOURI FLAT RD INTS]
	424	TIRAPELLI L
	435	BACK ON TRACK COUNSELING SERV
	435	MCCUNE CAROLE
	460	DEB'S FROSTY
	460	X [CHINA GARDEN INTS]
	461	TAYLOR THOMAS
	484	ALTERBATIVE HEALING ALLIANCE
	484	AZTECA BAKERY & MARKET
	484	BAHAI CENTER
	484	BUILDING
	484	CARLA'S LIKE YOUR STYLE
	484	DIAMOND SPRINGS MOBILITY
	484	DIAMOND TV & SATELLITE

	484	DIAMOND VILLAGE CHIROPRACTIC
	484	DUIVAS FITNESS FOR WOMEN
	484	ELDRO HUMANE SOCIETY
	484	FACTORY TEAM 2 RCNG MTR SPRTS
	484	FINE LINE TATOOING
	484	INALLIANCE
	484	MAIN STREET MAIL
	484	MCCULLCH MIKIO A DC
	484	TAYLOR CLIFF A DC
	484	TAYLOR CLIFF A DC
	484	TAYLOR JOHN DR DIAMOND V C
	484	TAYLOR JOHN F
	484	X [HOWARD CIR INTS]
	504	HANSEN DENISE D LCSW
	504	VENDERKAR PEF MA MPA MFT

HAINES DIRECTORY

SACRAMENTO EAST(CITY & SUBURB) 2002-03 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	TOWER MART
130	TOWER MART
273	CRAETIVE PHOTO FRAMES
273	HARRINGTON P
320	PARISEK JOHN
321	APARTMENTS
321	DAWSON OIL CO
321	WESTWOOD MBL HMS
321	X [COMMERCE WAY INTS]
373	D & D SUPPLY
373	D&B PLUMBING SUPPLY
373	X [MISSOURI FLAT RD INTS]
424	TIRAPELLE L
435	MCCUNE CAROLE

435	YUBACOIN INC
443	LASHER WM
444	PARKER JOHN
460	DEB'S FROSTY
460	SMITH ELAIDA
461	TAYLOR THOMAS
470	BONANZA CARPET CLEANING
478	DIAMOND TV&SATELLITE
484	ALMOST ANTIQUES
484	BARGAIN BARIN
484	CARLENE'S
484	DOWNTOWN DOLLS
484	ELDRO HUMANE SOCIETY
484	HAIR BY KIMBERLY
484	HIGH MOUNTAIN BLUE WATER TCKL
484	IRON MOUNTAIN MOTORCYCLES
484	KNIGHT VIRGIL
484	KNIGHT'S MUSIC
484	MOUNATIN MAIL 2
484	MULLEN MIKE
484	TAYLOR JOHN
493	DIAMOND ESORESSO&MORE
501	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1995-96 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	NO CURRENT LISTING
273	CREATIVE PHOTO FRME
350	WESTWOOD MBL HMS
424	TIRAPELLI L
443	LASHER WM
484	IMAGES LIFE PHOTO

	484	JACKS CABINETS
	515	ROHLFING FRANK

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1990 **PLEASANT VALLEY RD**

1	STREET BEGINS
130	FOOD&LIQUOR
202	CARSTEN D
300	NO CURRENT LISTING
350	WESTWOOD MBL HMS
373	NO CURRENT LISTING
424	TIRAPELLE L
484	JACKS CABINETS
515	ROHLFING FRANK

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1985 **PLEASANT VALLEY RD**

1	STREET BEGINS
98	HARSHFIELD COLLIN F
118	HEDGECOCK C
300	NO CURRENT LISTING
350	WESTWOOD MBL HMS
484	LARSEN H CABINET
517	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN) 1980 **PLEASANT VALLEY RD**

1	STREET BEGINS
350	WERSTWOOD MBL HMS
466	NO CURRENT LISTING
538	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN)	1977	**PLEASANT VALLEY RD**	
		1	STREET BEGINS
		350	MULTI TENANT RESIDENTIAL
		350	WERSTWOOD MBL HMS
		350	WESTWD MBL HM CMNTY
		466	WEINAND KENT MRS
		538	NO CURRENT LISTING

HAINES DIRECTORY

SACRAMENTO (CITY & SUBURBAN)	1970	**PLEASANT VALLEY RD**	
		1	STREET NOT LISTED

Comment: No coverage for Diamond Springs prior to 1970.

GeoSearch
On time. On target. In touch.™

Environmental Lien

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California
95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269579
Project #: D180359
PO #: D180359-99
Date: 12/10/2018

phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.com

TARGET PROPERTY SUMMARY

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

USGS Quadrangle: ***Placerville, CA***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-120.816351, 38.677359), (-120.821951, 38.677527), (-120.821887, 38.678113), (-120.819848, 38.678096), (-120.819891, 38.680006), (-120.820835, 38.680006), (-120.820878, 38.680927), (-120.821780, 38.680927), (-120.821715, 38.683322), (-120.821865, 38.686086), (-120.822874, 38.687359), (-120.819720, 38.688867), (-120.818647, 38.689017), (-120.818582, 38.689871), (-120.820685, 38.689905), (-120.821072, 38.690374), (-120.819999, 38.690642), (-120.820235, 38.691345), (-120.819527, 38.691747), (-120.818411, 38.691312), (-120.818776, 38.693623), (-120.818411, 38.693707), (-120.817595, 38.690458), (-120.815428, 38.690273), (-120.815042, 38.690525), (-120.815063, 38.690056), (-120.817102, 38.687962), (-120.817510, 38.685332), (-120.817188, 38.685316), (-120.817166, 38.680961), (-120.817016, 38.680961), (-120.817059, 38.680123), (-120.816565, 38.679554), (-120.816651, 38.678548), (-120.816351, 38.677359)

County/Parish Covered:
El Dorado (CA)

Zipcode(s) Covered:
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

State(s) Covered:
CA

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GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of El Dorado County Recorders Records for “Environmental Liens” only on the subject property as identified as APN: 329-301-20-100, Diamond Springs, CA. and find the following:

None found

We have done a search of El Dorado County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as APN: 329-301-20-100, Diamond Springs, CA. and find the following:

None found

GeoPlus Oil & Gas Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269583
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Oil & Gas Map 3

Environmental Records Definitions 5

Disclaimer

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

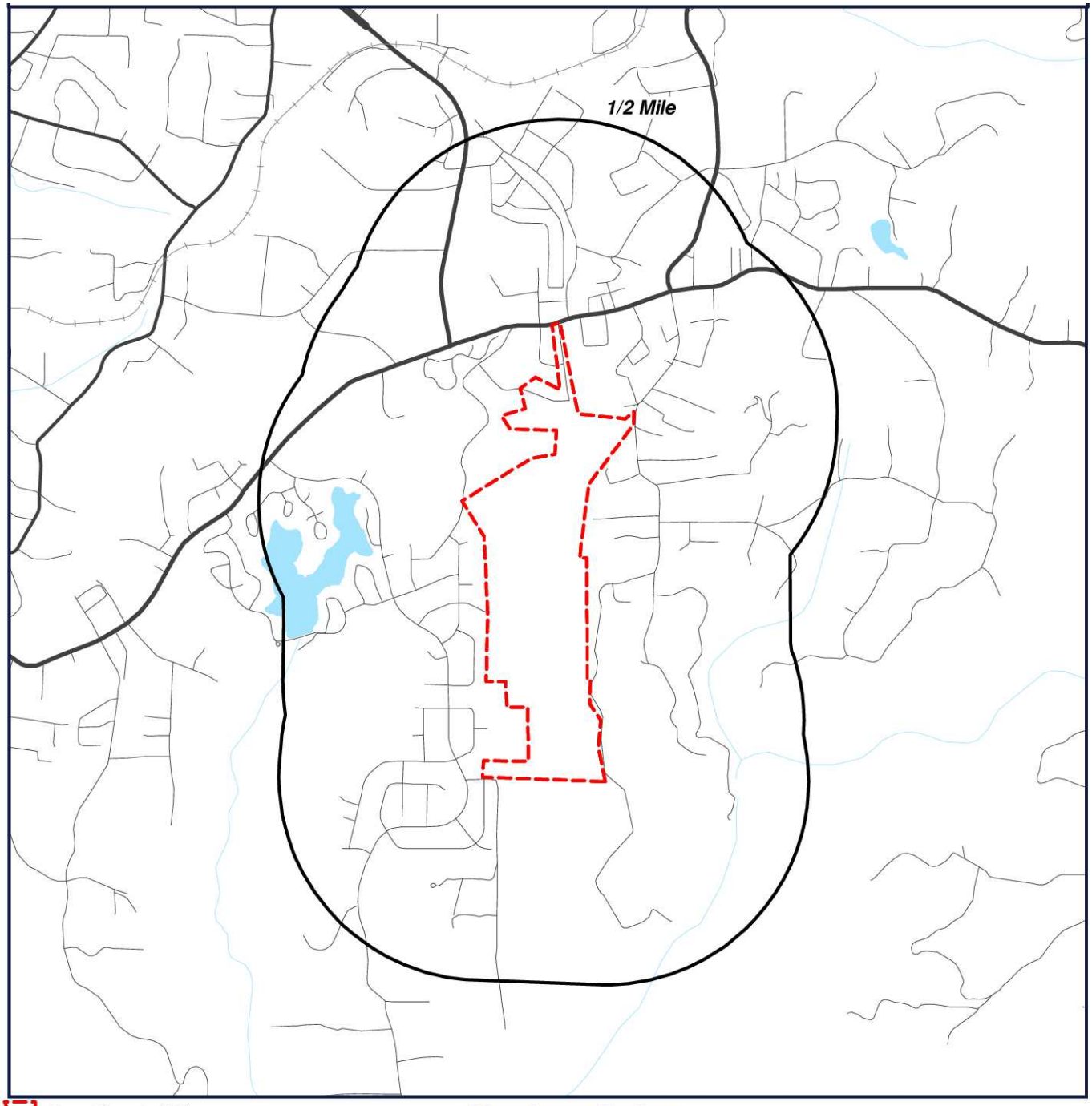
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
OG	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

OIL & GAS WELL MAP



Target Property (TP)

Well Location

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

No Records Found.

OG Oil and Gas

VERSION DATE: 04/16/18

This oil, gas, and geothermal well information database is maintained by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources. The database information may change without notice. The Department of Conservation makes no warranties, whether expressed or implied, as to the suitability of the product for any particular purpose. Any use of this information is at the user's own risk.

GeoPlus Physical Setting Maps

Satellite view

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269585
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

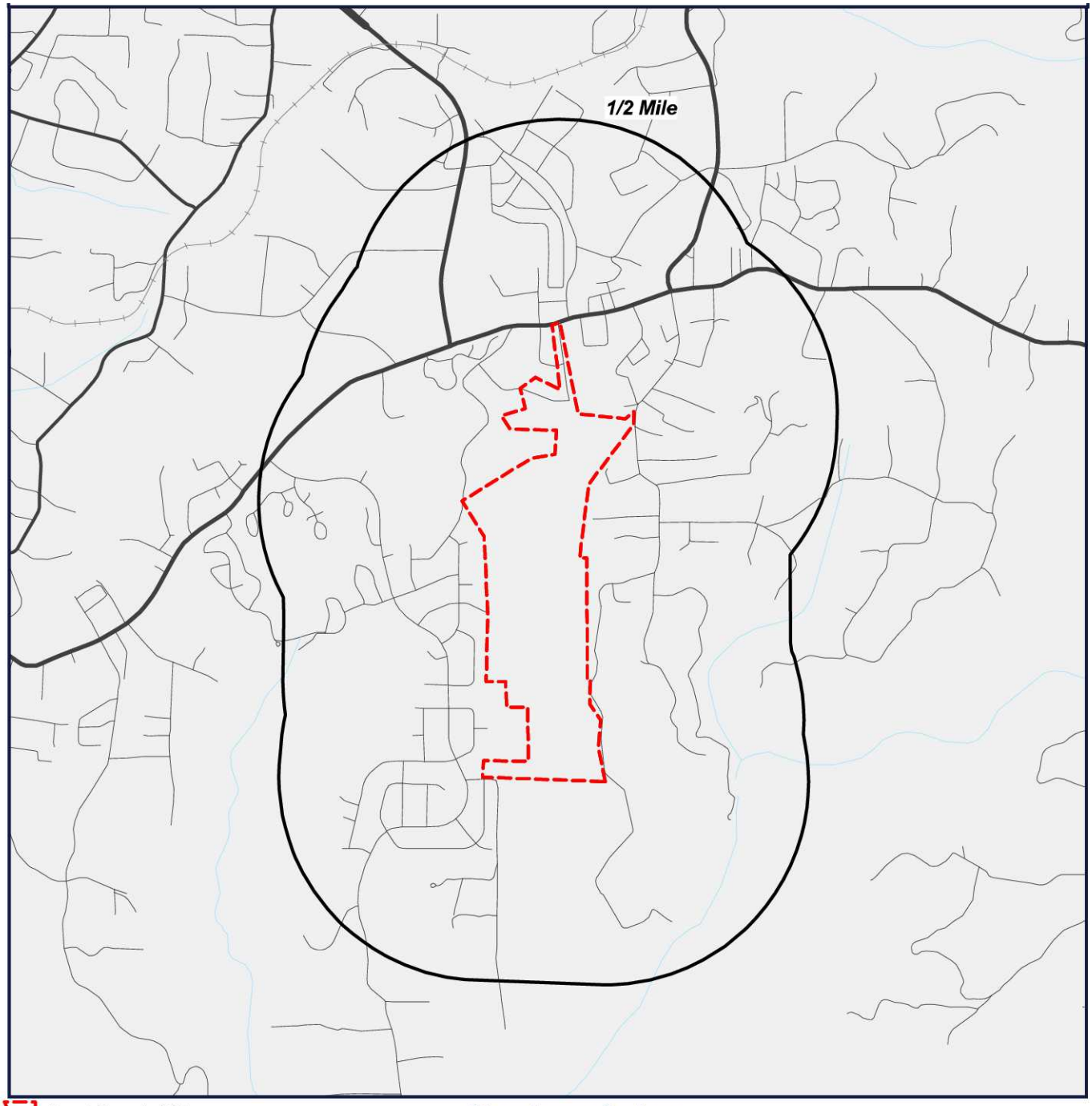
Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

FEMA Map



Target Property (TP)

ZONE A	ZONE D
ZONE AE	ZONE X
ZONE AH	AREA NOT INCLUDED
ZONE A0	OPEN WATER
ZONE AR	NDA - DIGITAL DATA NOT AVAILABLE
ZONE V	
ZONE VE	

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Letter of map revision date: 05/18/2018
Latest study effective date: 04/04/2018
Panel #: 06005C0075F

Click here to access Satellite view

FEMA Report

FEMA - Federal Emergency Management Agency

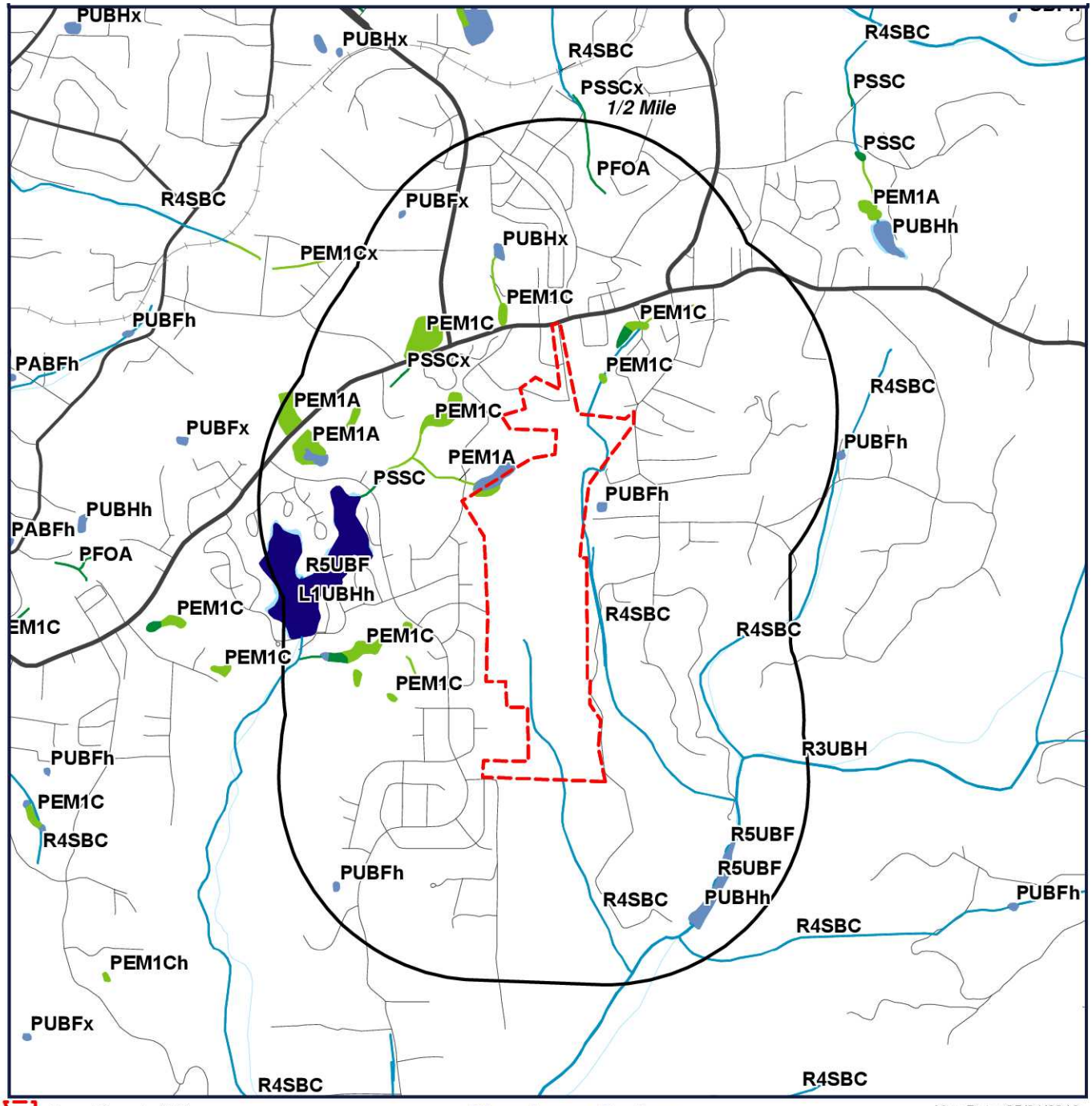
The National Flood Hazard Layer (NFHL) data used in this report is derived from the Federal Emergency Management Agency. The NFHL dataset is a compilation of effective Flood Insurance Rate Map (FIRM) databases (a collection of the digital data that are used in GIS systems for creating new Flood Insurance Rate Maps) and Letters of Map Change (Letters of Map Amendment and Letters of Map Revision only) that create a seamless GIS data layer for United States and its territories. The NFHL is updated as new study or LOMC data becomes effective. Note: Currently, not all areas have modernized FIRM database data available. As a result, users may need to refer to the effective Flood Insurance Rate Map for effective flood hazard information. This data was provided by the Federal Emergency Management Agency's Map Service Center in November of 2013.

FEMA Flood Zone Definitions within Search Radius

X	Zone X

An area that is determined to be outside the 100 and 500 year floodplains.

NWI Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

Map Date: 05/01/2018

- ESTUARINE AND MARINE DEEPWATER
- ESTUARINE AND MARINE WETLAND
- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/ SHRUB WETLAND
- LAKE
- OTHER
- RIVERINE
- FRESHWATER POND
- NDA - DIGITAL DATA NOT AVAILABLE

N W E S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

NWI Report

NWI - National Wetlands Inventory

The US NWI digital data bundle is a set of records of wetlands location and classification as defined by the U.S. Fish & Wildlife Service. This dataset is one of a series available in 7.5 minute by 7.5 minute blocks containing ground planimetric coordinates of wetlands point, line, and area features and wetlands attributes. When completed, the series will provide coverage for all of the contiguous United States, Hawaii, Alaska, and U.S. protectorates in the Pacific and Caribbean. The digital data as well as the hardcopy maps that were used as the source for the digital data are produced and distributed by the U.S. Fish & Wildlife Service's National Wetlands Inventory project. Currently, this data is only available in select counties throughout the United States.

NWI Definitions within Search Radius

L1UBHh

SYSTEM: **LACUSTRINE**
SUBSYSTEM: **LIMNETIC**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **PERMANENTLY FLOODED**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PEM1A

SYSTEM: **PALUSTRINE**
CLASS: **EMERGENT**
SUBCLASS: **BROAD-LEAVED DECIDUOUS**
WATER REGIME: **TEMPORARILY FLOODED**

PEM1C

SYSTEM: **PALUSTRINE**
CLASS: **EMERGENT**
SUBCLASS: **BROAD-LEAVED DECIDUOUS**
WATER REGIME: **SEASONALLY FLOODED**

PFOA

SYSTEM: **PALUSTRINE**
CLASS: **FORESTED**

PSSC

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**

PSSCx

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**
SPECIAL MODIFIER: **EXCAVATED**

PUBFh

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PUBFx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **EXCAVATED**

PUBHh

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **DIKED/IMPOUNDED**

PUBHx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED BOTTOM**
SPECIAL MODIFIER: **EXCAVATED**

R3UBH

SYSTEM: **RIVERINE**
SUBSYSTEM: **UPPER PERENNIAL**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **PERMANENTLY FLOODED**

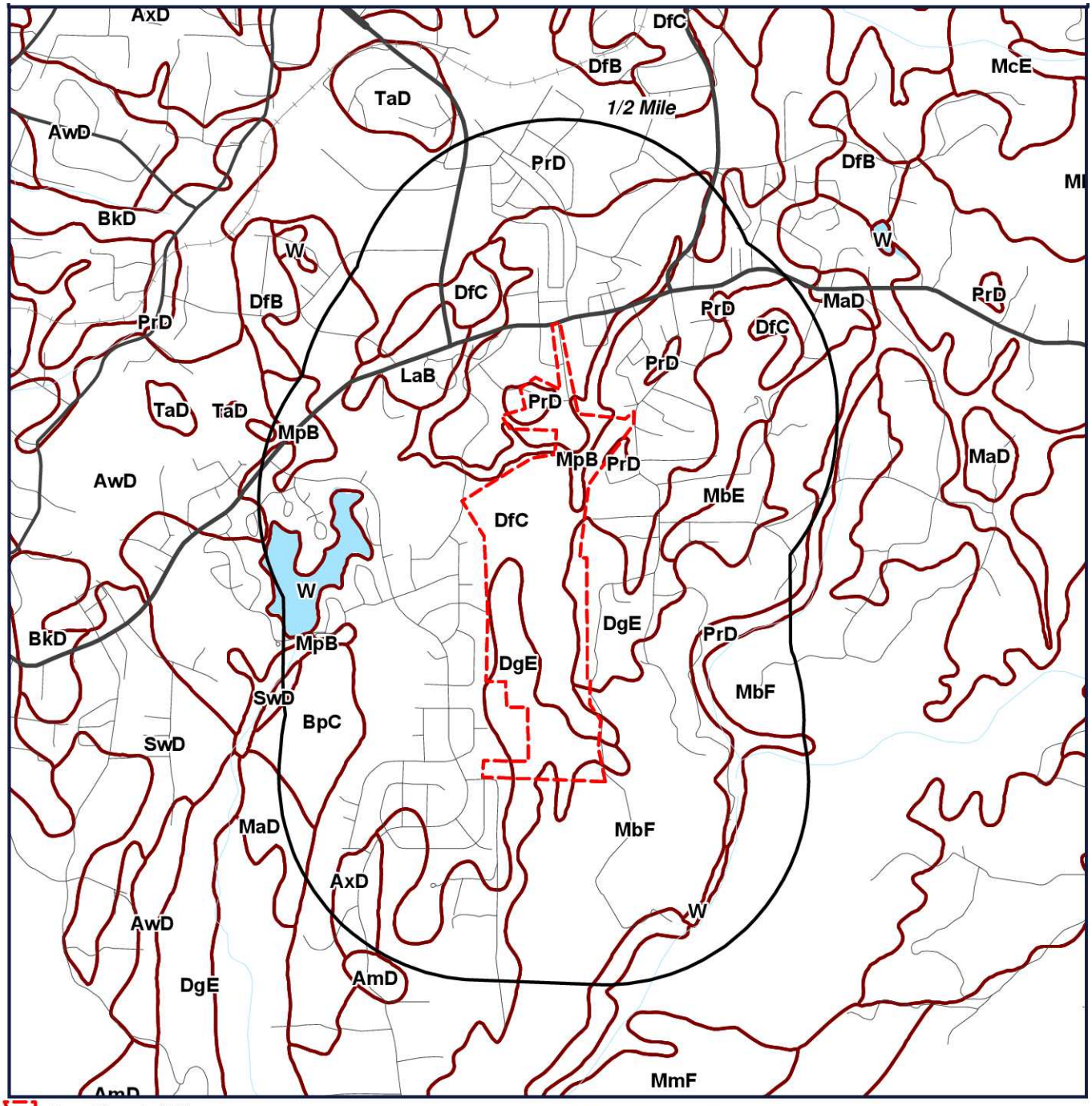
R4SBC

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **SEASONALLY FLOODED**

R5UBF

SYSTEM: **RIVERINE**
SUBSYSTEM: **UNKNOWN PERENNIAL**
CLASS: **UNCONSOLIDATED BOTTOM**
WATER REGIME: **SEMIPERMANENTLY FLOODED**

Soil Map



Target Property (TP)

SOIL BOUNDARY

NOTCOM - DIGITAL DATA NOT AVAILABLE/NOT COMPLETE

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

SOIL Report

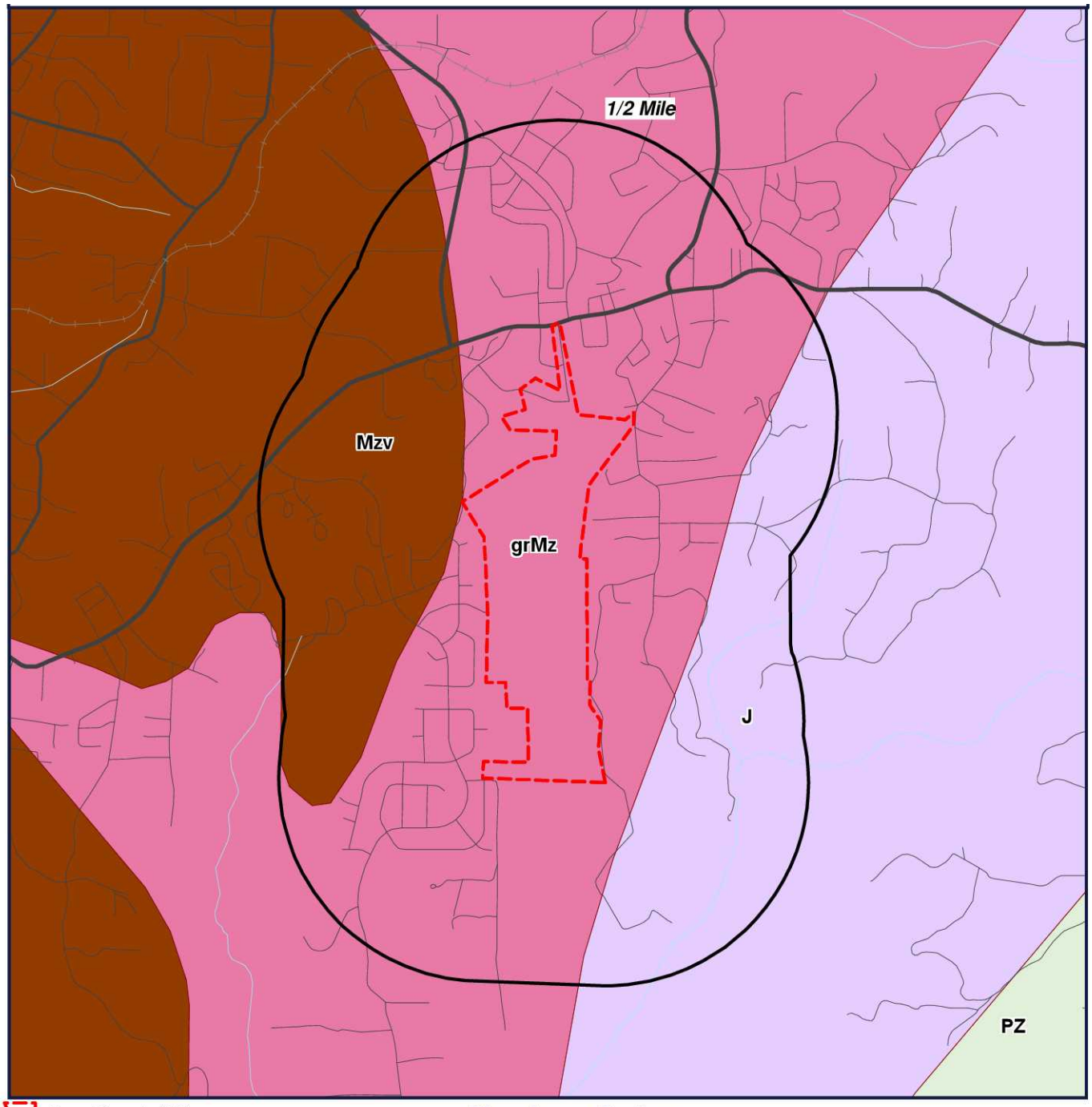
Soil Surveys

The soil data used in this report is obtained from the Natural Resources Conservation Service (NRCS). The NRCS is the primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources. The soil survey contains information that can be applied in managing farms and ranches; in selecting sites for roads, ponds, buildings and other structures; and in determining the suitability of tracts of land for farming, industry and recreation. This data is available in select counties throughout the United States.

SOIL Code Definitions within Search Radius

AwD	AUBURN SILT LOAM, 2 TO 30 PERCENT SLOPES
AxD	AUBURN VERY ROCKY SILT LOAM, 2 TO 30 PERCENT SLOPES
BpC	BOOMER-SITES LOAMS, 9 TO 15 PERCENT SLOPES
DfB	DIAMOND SPRINGS VERY FINE SANDY LOAM, 3 TO 9 PERCENT SLOPES
DfC	DIAMOND SPRINGS VERY FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES
DgE	DIAMOND SPRINGS VERY ROCKY VERY FINE SANDY LOAM, 3 TO 50 PERCENT SLOPES
LaB	LOAMY ALLUVIAL LAND
MaD	MARIPOSA GRAVELLY SILT LOAM, 3 TO 30 PERCENT SLOPES
MbE	MARIPOSA VERY ROCKY SILT LOAM, 3 TO 50 PERCENT SLOPES
MbF	MARIPOSA VERY ROCKY SILT LOAM, 50 TO 70 PERCENT SLOPES
MpB	MIXED ALLUVIAL LAND
PrD	PLACER DIGGINGS
SwD	SOBRANTE VERY ROCKY SILT LOAM, 3 TO 30 PERCENT SLOPES
TaD	TAILINGS
W	WATER

Geology Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

GEOLOGY Report

US GEOLOGY

THE GEOLOGY DATA USED IN THIS REPORT ORIGINATES FROM THE USGS. THE FIRST STAGE IN DEVELOPING STATE DATABASES FOR THE CONTERMINOUS UNITED STATES WAS TO ACQUIRE DIGITAL VERSIONS OF ALL EXISTING STATE GEOLOGIC MAPS. ALTHOUGH A SIGNIFICANT NUMBER OF DIGITAL STATE MAPS ALREADY EXISTED, A NUMBER OF STATES LACKED THEM. FOR THESE STATES NEW DIGITAL COMPILATIONS WERE PREPARED IN COOPERATION WITH STATE GEOLOGIC SURVEYS OR BY THE NSA (NATIONAL SURVEYS AND ANALYSIS) PROJECT. THESE NEW DIGITAL STATE GEOLOGIC MAPS AND DATABASES WERE CREATED BY DIGITIZING ALREADY EXISTING PRINTED MAPS, OR, IN A FEW CASES, BY MERGING EXISTING LARGER SCALE DIGITAL MAPS.

GEOLOGY Definitions within Search Radius

GEOLOGY SYMBOL: **grMz**
UNIT NAME: **Mesozoic granitic rocks, unit 3 (Sierra Nevada, Death Valley area, Northern Mojave Desert and Transverse Ranges)**
UNIT AGE: **Permian to Tertiary; most Mesozoic**
UNIT DESCRIPTION:
Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite
ADDITIONAL UNIT INFORMATION:
Sierra Nevada, Death Valley area, Transverse Ranges and Mojave Desert. Primarily granodiorite, tonalite, quartz monzonite, and granite ranging in age from Late Triassic to Late Cretaceous. Includes some rocks as old as Permian and possibly a few as young as Tertiary. Three main periods of emplacement (Triassic, Jurassic, and Cretaceous); wide variety of rock types
ROCKTYPE/S: **granodiorite; quartz monzonite; tonalite; quartz diorite; diorite; granite; monzodiorite; quartz syenite; quartz monzodiorite; gabbro; trondhjemite; alkali-granite (alaskite); pegmatite; monzonite; aplite**

GEOLOGY SYMBOL: **J**
UNIT NAME: **Jurassic marine rocks, unit 1 (Western Sierra Nevada and Western Klamath Mountains)**
UNIT AGE: **Triassic to Late Jurassic**
UNIT DESCRIPTION:
Shale, sandstone, minor conglomerate, chert, slate, limestone; minor pyroclastic rocks
ADDITIONAL UNIT INFORMATION:
Western Klamath Mountains, western Sierra Nevada. Primarily slate and metamorphosed graywacke; minor siltstone, conglomerate, chert, and volcanic rocks. Mainly Late Jurassic in age, but also includes some Early Jurassic or older rocks
ROCKTYPE/S: **slate; graywacke; siltstone; pyroclastic; conglomerate; chert; basalt**

GEOLOGY SYMBOL: **Mzv**
UNIT NAME: **Mesozoic volcanic rocks, unit 2 (Western Sierra Foothills and Western Klamath Mountains)**
UNIT AGE: **Jurassic**
UNIT DESCRIPTION:
Undivided Mesozoic volcanic and metavolcanic rocks. Andesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks; in part strongly metamorphosed. Includes volcanic rocks of Franciscan Complex: basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks
ADDITIONAL UNIT INFORMATION:
Western Sierra Nevada and western Klamath Mountains. Mostly basaltic to andesitic breccias, flows, and tuffs, metamorphosed but with primary volcanic features generally recognizable. Minor associated sandstone and conglomerate. Largely or entirely of marine origin. Includes some rocks interpreted as ophiolites (Smartville complex)
ROCKTYPE/S: **mafic volcanic rock; intermediate volcanic rock; felsic volcanic rock; chert; sandstone; conglomerate**

GeoPlus Water Well Report

NEW: *GeoLens by Geosearch*

Target Property:

Stonehenge Springs
Faith Lane
Diamond Springs, El Dorado County, California 95619

Prepared For:

Environmental Science Assoc-San Francisco

Order #: 118699
Job #: 269582
Project #: D180359
PO #: D180359-99
Date: 12/07/2018

Table of Contents

Target Property Summary 1

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Environmental Records Definitions 6

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Target Property Summary

Target Property Information

Stonehenge Springs
Faith Lane
Diamond Springs, California 95619

Coordinates
Area centroid (-120.81907, 38.6845057)

USGS Quadrangle
Placerville, CA

Geographic Coverage Information

County/Parish: El Dorado (CA)
ZipCode(s):
Diamond Springs CA: 95619
El Dorado CA: 95623
Placerville CA: 95667

Database Radius Summary

FEDERAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
NWIS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0

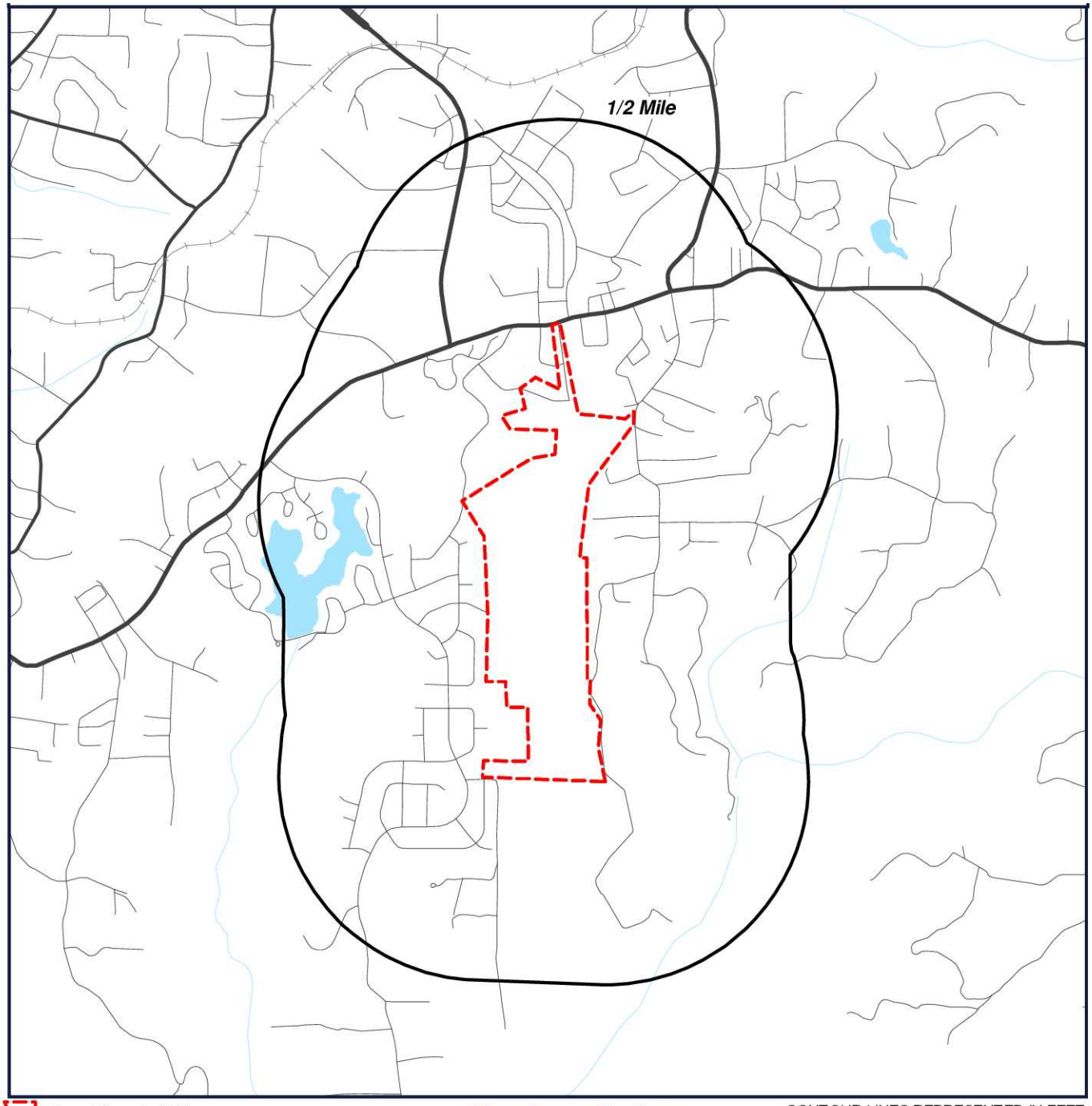
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
DWRWELLS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Waterwell Map



Target Property (TP)

Stonehenge Springs
Faith Lane
Diamond Springs, California
95619

CONTOUR LINES REPRESENTED IN FEET

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

No Records Found.

NWIS United States Geological Survey National Water Information System

VERSION DATE: 12/14/16

This USGS National Water Information System database only includes groundwater wells. The USGS defines this well type as: A hole or shaft constructed in the earth intended to be used to locate, sample, or develop groundwater, oil, gas, or some other subsurface material. The diameter of a well is typically much smaller than the depth. Wells are also used to artificially recharge groundwater or to pressurize oil and gas production zones. Additional information about specific kinds of wells should be recorded under the secondary site types or the Use of Site field. Underground waste-disposal wells should be classified as waste-injection wells.

DWRWELLS California Department of Water Resources Water Wells

VERSION DATE: 05/09/18

The California Department of Water Resources (DWR) maintains this database of water wells, including California Statewide Groundwater Elevation Monitoring (CASGEM) program wells and Voluntary wells. In Late 2009 the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. To achieve that goal, the amendment requires collaboration between local monitoring entities and DWR to collect groundwater elevation data. In accordance with this amendment to the Water Code, DWR developed the CASGEM program.

APPENDIX C

Interview Questionnaire

INTERVIEW QUESTIONNAIRE
PHASE I ENVIRONMENTAL SITE ASSESSMENT
Compatible with ASTM Standard E 1527

Site Name: Dorado Oaks _____

Site Address: Faith Lane _____

Date: February 26, 2019 _____

Interviewer: Michael Burns _____

Interviewee: Kevin Sweeney _____

Site Association: Owner & developer _____

Years Associated: 20 years _____

Please answer the following questions to the best of your knowledge.

1. Was the property or adjoining property ever used for industrial purposes (e.g. manufacturing) or as a gas station, dry cleaners, waste treatment, processing facility, motor repair facility, photo lab, commercial printing facility, junkyard/disposal/recycling/ landfill? If yes, please list the activity, hazardous substances used, and approximate dates when the activity occurred.

   Prior land use, hazardous substances used, and dates:
   Some previous development efforts but none that proceeded to completion __
   _____
   _____

   Prior owners, key site managers/operators, occupants and dates:
   Pre-dates Mr. Sweeney_____
   _____
   _____

   Existing or prior structures used for what purposes and duration:
   None known_____
   _____
   _____
   _____

2. Do any of the following documents exist for the site or any portion of the site? If so, can you provide a copy? Leins? **No leins are known. The geotech report was provided.**

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Environmental permits
- ☐ Underground Storage Tank registration
- ☐ Underground Injection System registration
- ☐ Material Safety Data Sheets
- ☐ Community Right-To-Know Plan
- ☐ Safety plans: preparedness and prevention plans; spill prevention; countermeasure; and control plans, etc.
- ☐ Reports regarding hydrogeologic conditions on the property or surrounding area;
- ☐ Correspondence from any government agency relating to past or current violations of environmental laws with regard to the property or relating to environmental liens encumbering the property
- ☐ Hazardous waste generator notices or reports
- X Geotechnical studies
- ☐ Risk assessments
- ☐ Recorded Activity and Use Limitations (AULs)

3. Have you ever observed evidence of or do you have prior knowledge of any of the following items being used, stored, discarded, dumped above grade, buried, or burned onsite? Circle all that apply and indicate amount and approximate dates. **NONE**

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Above ground storage tank (AST)*			Size: Contents: Condition:
Automotive batteries			
Industrial batteries			
Pesticides (>5 gallon)			
Paints (> 5 gallon)			
Chemicals/Hazardous Substances (> 5 gallon liquid)			

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Chemicals/Hazardous Substances (dry sacks, containers, etc.)			
Industrial drums (typically 55 gallons)			Contents: Condition:
Transformer or other equipment that may contain PCBs (e.g. hydraulic equipment)*			Installation date:
Underground storage tank*			Size: Contents: Condition:
Unknown materials you suspect may be hazardous substances			Describe:

*Please provide records if available.

4. What method(s) is used to contain spills of hazardous waste?

N/A

5. What method(s) is used to dispose of hazardous waste?

N/A

6. Are there any permits for handling, use, storage, or disposal of hazardous waste?

None

7. Have you observed evidence of or have prior knowledge of the following onsite?

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Equipment Maintenance Areas	None		
Accidental spills or releases of chemicals or petroleum products	None		

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Possible asbestos containing materials (e.g. pipe, building, etc.)	None		Describe material:
Fill dirt originating from an unknown or contaminated site?	None		Source:
Pits, ponds, or lagoons associated with waste treatment or waste disposal?	None		Location:
Stained soil or odiferous soil? (e.g. oily black)	None		Location:
Sumps or dry wells*	None		Size : Contents : Condition :
Vent pipes, fill pipes, access ways to a fill pipe protruding from the ground or adjacent to a structure onsite?	None		Location:
Heating and cooling systems (include fuel source)	None		Source:
Flooring, drains, walls that are stained or emitting a foul odor (do NOT include water damage)?	None		Location:

*Please provide records if available.

8. Is the property served by a private well or non-public water system? If so, please answer the following: **No**

   a. Was the well used for domestic (D), agricultural irrigation (I), or monitoring (M) purposes? Are the wells currently operational and if not, when were they last used? When was the well drilled? How deep is the well? What is the approximate discharge rate?

Well No.	Type	Operating?	Last Used	Date Drilled	Depth	Discharge Rate	Location
1-							
2-							

b. Have the wells been sampled for contaminants that exceed applicable requirements for the designated use (e.g. Drinking Water Standards)? If so, please provide the dates and copies of well records. No

c. Has the well or water system been designated by any governmental environmental/health agency as contaminated? None known

9. Is there an oil/gas well or oil/gas vent located onsite? If so, please indicate the location. Please supply any documents available.

No _____
_____
_____

10. Is the property or has the property to your knowledge been previously served by a septic system? If so, please indicate the location of the tank and leach lines (if applicable) and list any hazardous materials disposed.

Unknown_____
_____
_____

11. Does the property discharge waste water into a storm water sewer system or a sanitary sewer system onto or adjacent to the property? If so, please describe location, piping flow, quantity discharged, and water quality.

No _____
_____
_____

12. Do you have knowledge of the following with respect to the property? Circle and explain all that apply.

a. Environmental clean-up, ongoing or pending. **None**

b. Environmental liens **None**

c. Governmental notifications regarding any possible past or present violations of environmental laws. **None**

d. Past, threatened, pending lawsuits or administrative proceedings relevant to a release of a hazardous substance or petroleum product, in, on, or from the property. **None**

e. Prior environmental assessment that indicated the presence of hazardous substances, petroleum hydrocarbons, contaminants, or recommended further assessment. **None**

f. Deed Restrictions - **None**

g. Citizen complaints regarding activities onsite **None**

AGRICULTURAL SITES: No

13. What crops have been grown onsite, currently and in the past?

CROP	DATE	LOCATION
None		

If crops are present or have been grown, please answer questions 14 through 16 below:

14. Have pesticides been applied to fields or other portions of the site? If so, please answer the following questions:

    a. List the names of pesticides (includes herbicides, fungicides, insecticides, rodenticide) used and dates applied.

PESTICIDE AND BRAND NAME	DATE	CROP OR ANIMAL USE

b. Have you been notified of any violation of environmental law with respect to application or storage of pesticides?

_____
_____
_____

c. Location of pesticide mixing areas, if any (past or present)?

_____
_____
_____

d. Method of pesticide application?

_____
_____
_____

15. Have fertilizers been applied to the site? What type and method of application?

_____
_____
_____

16. Are there any buried pipelines for irrigation or other purposes onsite? If so, what materials is the piping constructed of? Asbestos containing material, PVC, other? Describe the location of buried piping.

_____
_____
_____

User Questionnaire

Only the client ("user") needs to respond to the following questions:

17. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state, or local law?

18. Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

19. As the user of this Phase 1 ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

20. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

21. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

a) Do you know the past uses of the property?

b) Do you know of specific chemicals that are present or once were present at the property?

c) Do you know of spills or other chemical releases that have taken place at the property?

d) Do you know of any environmental cleanups that have taken place at the property?

22. As the user of this Phase 1 ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

Appendix G
Hydrology & Water Quality

ESA

TECHNICAL MEMORANDUM

Date: September 27, 2018

To: El Dorado County

From: Brian Hammer

CC: Greg Stedfield

Subject: Dorado Oaks Drainage and Storm Water Quality Technical Memo for Tentative Map

---

Introduction

This Technical Memorandum (TM) is a technical drainage assessment for the Dorado Oaks proposed development and provides a tentative map level of analysis for the proposed storm drainage infrastructure and storm water quality facilities.

The contributary area analyzed herein is comprised of approximately 501 acres of which approximately 70 acres are developed with the remainder consisting of off-site and on-site contributory areas not developed for this project. See Appendix A for existing and developed watershed Maps.

The purpose of this technical memo is to:

- Present technical storm drainage and stormwater quality calculations for the proposed project development.
- Conclude that the proposed infrastructure is sufficient to serve the planned development.

The data, modeling, and exhibits herein are based upon the NGVD 29 datum. No previous studies were utilized in the preparation of this report.

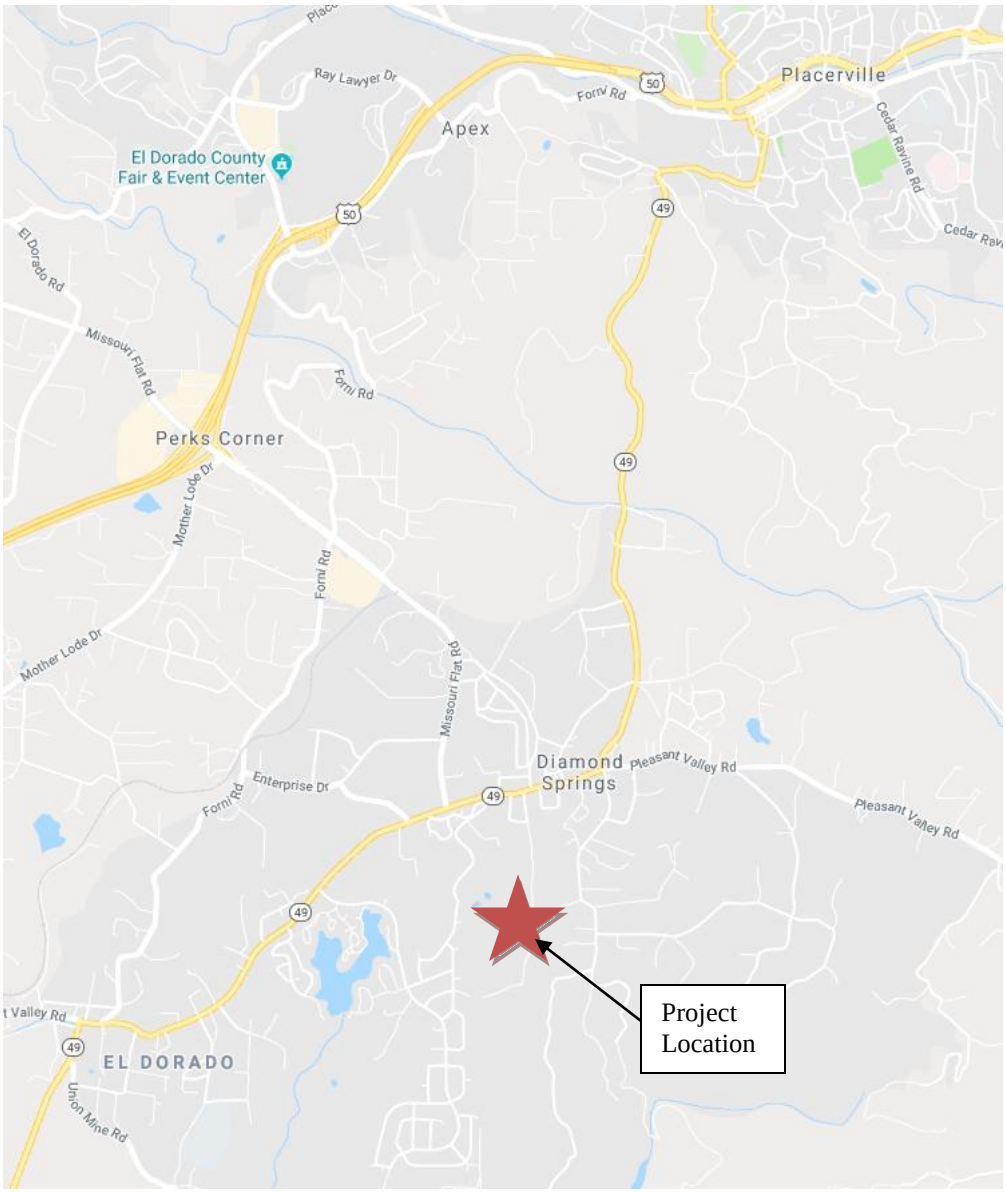


Figure 1. Project Location

Model Assumptions and Design Criteria

HEC-HMS was used to calculate runoff and to perform hydraulic calculations. The site discharges primarily to the south and east of the project with two smalls watersheds discharging to the West. There are two ridgelines in the project which results in a drainage path to the center of the project which continues south and a drainage path to the west of the project. There are five points of compliance for the project which can be seen on Figure 2. The path to the center and south is considered a single location in which the developed flow will be compared to the existing flows. The west slope of the project drains to compliance point 1 and 2. Compliance point 2 does not collect to a single point at the property line and therefore the flows leaving the site will be summed up and compared against the developed flows leaving the site to the west.

Due to the slope of the watershed it is assumed there will be no backwater condition placed on the swale outfalls.

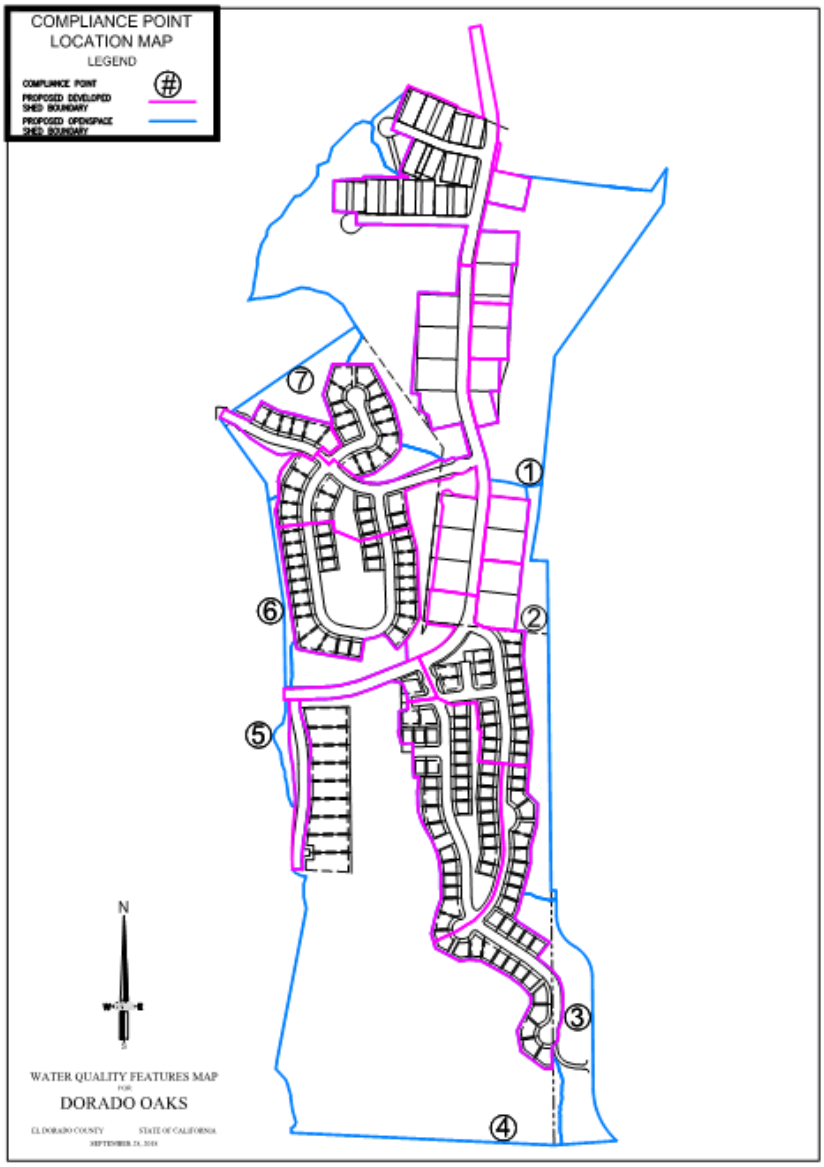


Figure 2. Compliance Point Locations

The hydrologic input and criteria used for the development of this study are summarized below:

- The site consists of USGS Soil Type C Soils (See Figure 3 Below).
- The percent impervious rates used are as follows:
  - Roadway: 95%
  - Single Family Lots:
  - T-Court Lots:
  - Apartments or Condominiums:
  - Open Space or Existing: 2%

The hydraulic input and criteria used for the development of this study are summarized below:

- The following Manning's 'n' values were used:

  - Pipes 0.015
  - Gutters 0.015
  - Asphalt Street Section 0.019
- Minimum pipe velocity of 2.0fps
- Minimum pipe diameter of 12”
- Data was input with information matching the tentative map grading plans.
- The 10-year hydraulic grade line shall stay at a minimum 1-foot below all manhole rims and inlet grates.
- The 100-year event shall be greater than 1 foot below adjacent finished pad elevations.
- 10-year and 100-year mitigation will be achieved for the development.
- Water Quality Swales and Basins will mitigate for the development impacts. No LID is assumed in the sizing of these facilities. If LID is proposed in the improvement plans these water quality features can be reduced in size.

Exhibit 1 displays the sheds, proposed pipe system, and pertinent results. The hydrologic data and parameters that were used to develop the runoff are included in Appendix A.

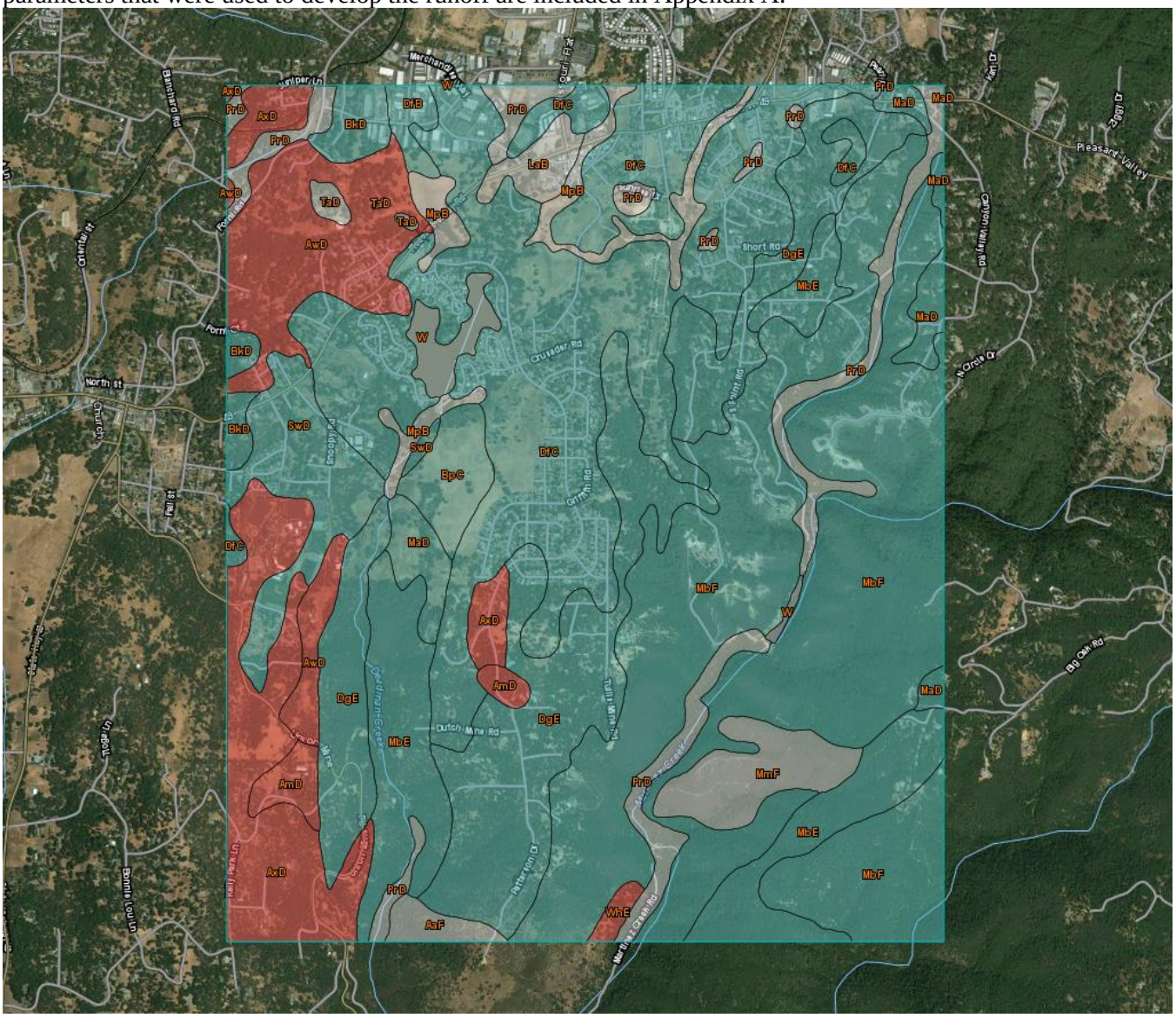


Figure 3. USGS Soil Map (Type C Soils)

10-Year Analysis and Results

The 10-year event for existing and proposed conditions was analyzed in HEC-HMS. Table 1 shows the resultant peak flows at each compliance point and the difference in flow leaving the site. The complete data and results are attached as Appendix B.

Table 1. 10-Year Peak Flows

Point of Compliance	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1	347	330	-17
2	17	13.7	-3.3
3	48	16	-32
4	87	87	0
5	4.4	12.4	8
6	19	13.6	-5.4
Total	522.4	472.7	-49.7

100-Year Analysis and Results

The 100-year event for existing and proposed conditions was analyzed in HEC-HMS. Table 2 shows the resultant peak flows at each compliance point and the difference in flow leaving the site. The complete data and results are attached as Appendix C.

Table 2. 100-Year Peak Flows

Point of Compliance	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1	575	546	-29
2	28	21.9	-6.1
3	77.6	26	-51.6
4	141	142	1
5	7	20.9	13.9
6	19	20.7	1.7
Total	847.6	777.5	-70.1

Storm Water Quality and Hydromodification

The Dorado Oaks proposed development projects create more than one acre of impervious surface. Due to this, it is required to provide storm water treatment for the 85th percentile event.

The first line of defense in maintaining storm water quality is to keep polluted water from commingling with clean water through the use of Source Controls. This can be done using structural and operational measures at the pollutant source. At this time in the development process source control measures are not yet implemented. It is anticipated that source control measures will be proposed for the apartment and T-lot development products. For the tentative map design, it is assumed no source control is proposed to show the largest size of water quality features.

Additionally, several Low Impact Development strategies are anticipated to reduce the post-development flows. These strategies remove pollutants from runoff, attenuate peak flows, and reduce runoff volume. The proposed LID measures include tree planting, disconnected impervious areas, bioretention facilities, and a vegetated swale. Similar to source controls, the LID features anticipated to be installed were not assumed to provide water quality or hydromodification reductions. This results in the greatest sized

facilities for purposes of land allocation. These facilities can be reduced at the improvement plan level analysis when LID feature locations and quantities are finalized.

No LID measures are proposed for off-site areas that contribute to the project's outfall nor for the interim graded pervious areas (future roadway).

The swale was sized to treat the entire stormwater quality flow without accounting for the tree planting, disconnected impervious areas, and bioretention facilities. Appendix D contains the calculations for sizing of the water quality swales which will adequately treat the development.

Conclusion

The results of the analysis performed for this Technical Memorandum demonstrate that the proposed improvements can be satisfactorily treated and conveyed within the proposed drainage facilities without damage to structures or downstream receiving waters. Further detail on the storm drain system, swale grading, final basin grading, and culverts will be provided with the improvement plan submittal.

Appendix A

EXISTING SHED MAP

LEGEND

EXISTING SHED BOUNDARY



N

W E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

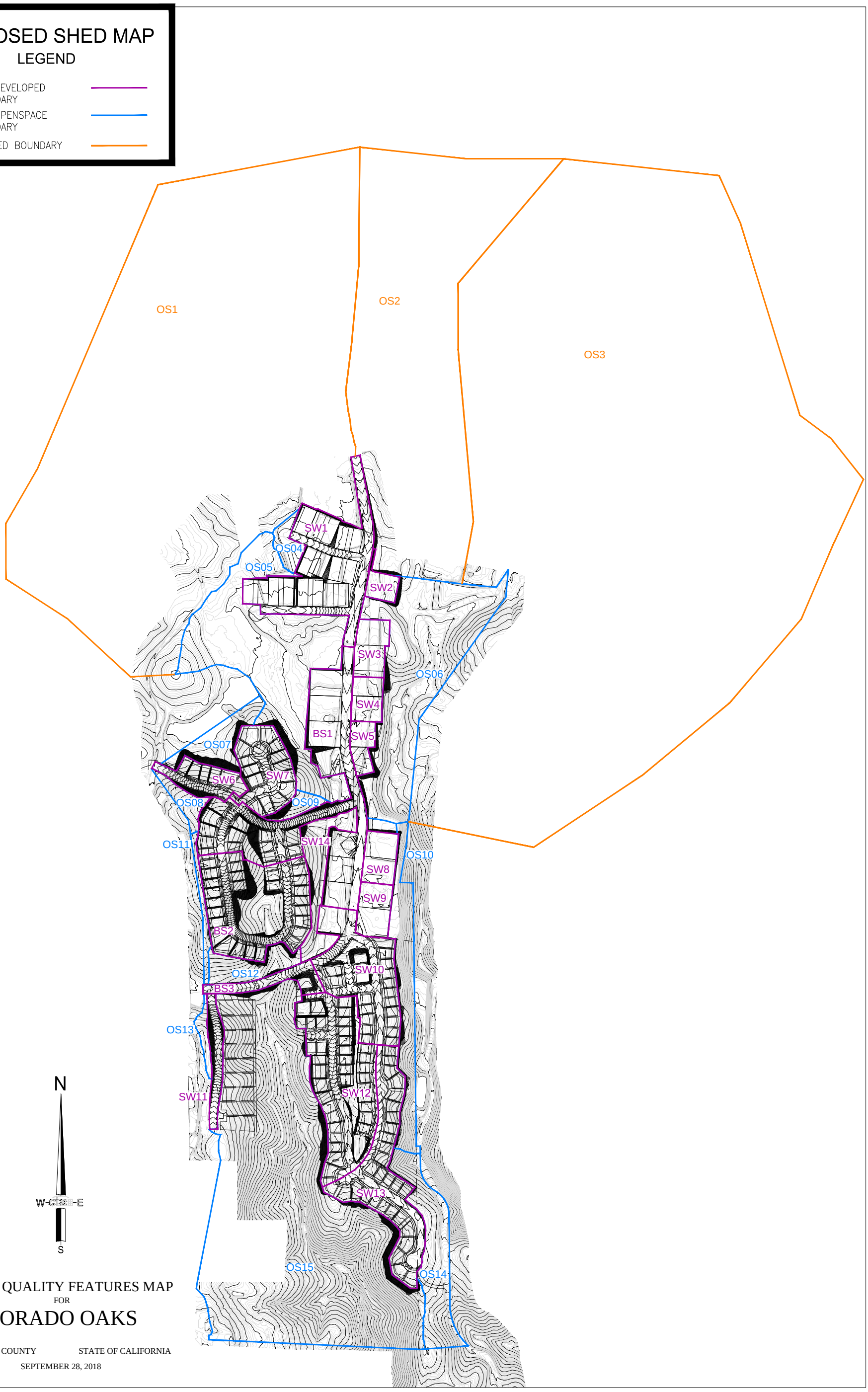
PROPOSED SHED MAP

LEGEND

PROPOSED DEVELOPED SHED BOUNDARY

PROPOSED OPENSPACE SHED BOUNDARY

EXISTING SHED BOUNDARY



WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

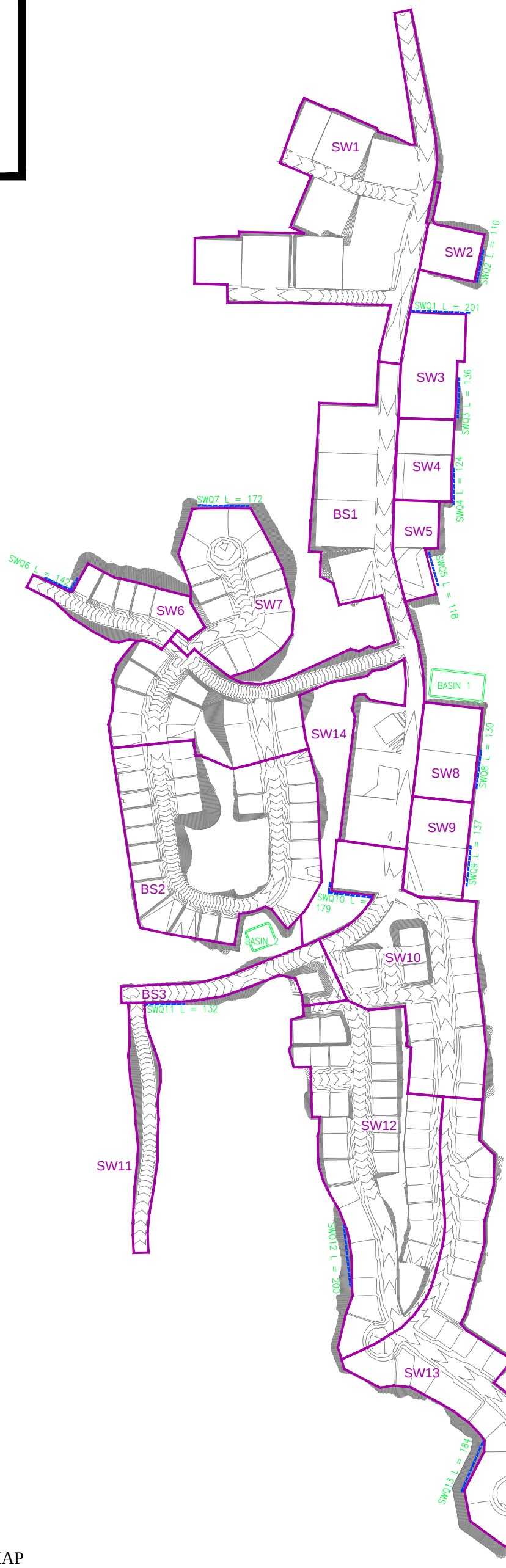
PROPOSED DRAINAGE FEATURES MAP

LEGEND

STORMWATER QUALITY SWALE

DETENTION BASIN

PROPOSED DEVELOPED SHED BOUNDARY



N

W-C-E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

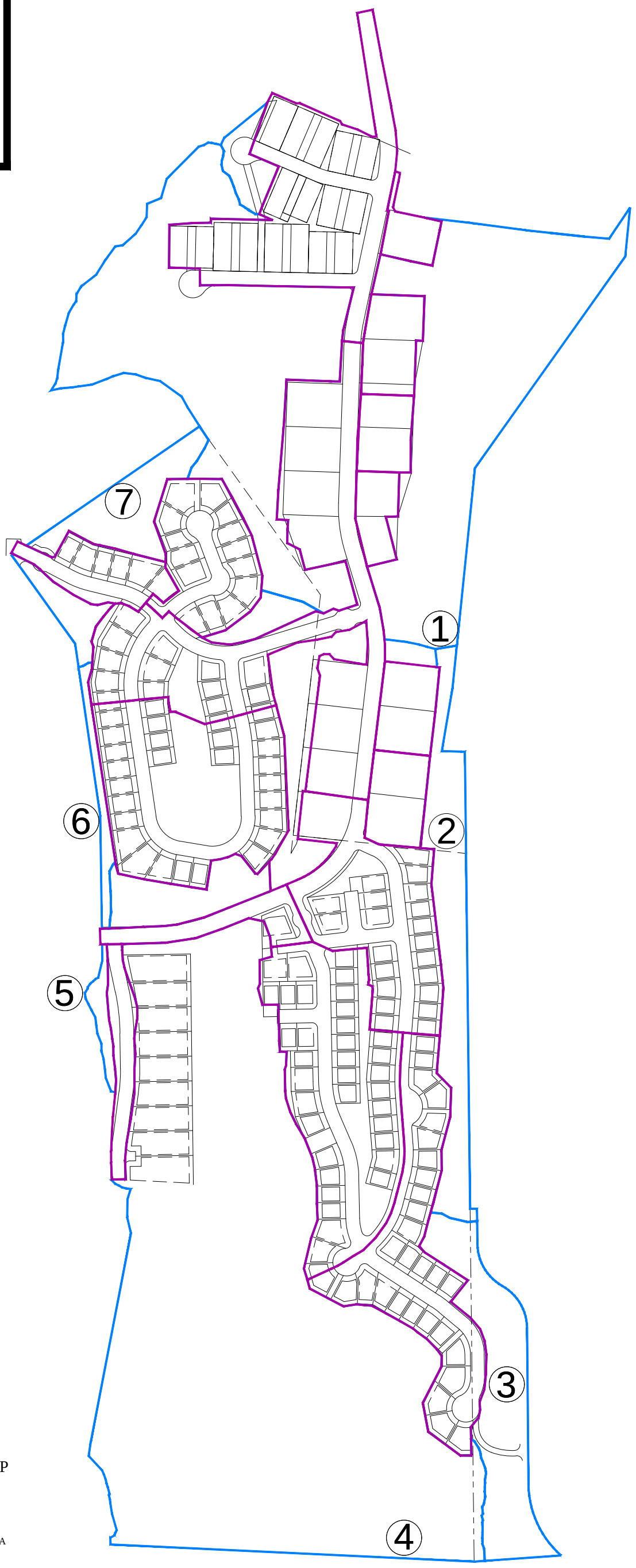
COMPLIANCE POINT LOCATION MAP

LEGEND

COMPLIANCE POINT #

PROPOSED DEVELOPED SHED BOUNDARY

PROPOSED OPENSPACE SHED BOUNDARY



N

W E

S

WATER QUALITY FEATURES MAP

FOR

DORADO OAKS

EL DORADO COUNTY STATE OF CALIFORNIA

SEPTEMBER 28, 2018

Appendix B

Sub-basin data : Existing

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		0.0		0.2817	0.0%
OS5			81	350513	8.0		0.0		0.0126	0.0%
OS6			81	721847	16.6		0.0		0.025893	0.0%
OS4			81	1229244	28.2		0.0		0.0441	0.0%
OS7			81	338677	7.8		0.0		0.0121	0.0%
OS8			81	766594	17.6		0.0		0.0275	0.0%
OS9			81	96217	2.2		0.0		0.0035	0.0%
OS11			81	353742	8.1		0.0		0.0127	0.0%
OS12.1			81	208267	4.8		0.0		0.0075	0.0%
OS12.2			81	106354	2.4		0.0		0.0038	0.0%
OS10			81	3129774	71.8		0.0		0.1123	0.0%

2) Lag Time : Existing

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS5	1784	1764	300	0.067	14	1764	1748	539	0.030	2.78	3.2	1748.0	1747.0	1	1.0000	10.0	0.0	17.58	**10.6**
OS6	1810	1800	300	0.033	13	1800	1734	1210	0.055	3.77	5.4	1734.0	1698.0	1513	0.0238	2.8	9.1	27.44	**16.5**
OS4	1769	1759	300	0.033	13	1759	1744	838	0.018	2.16	6.5	1744.0	1743.0	1	1.0000	10.0	0.0	19.48	**11.7**
OS7	1805	1784	100	0.210	3	1784	1766	336	0.054	3.73	1.5	1766.0	1765.0	1	1.0000	10.0	0.0	4.09	**2.5**
OS8	1774	1749	166	0.151	4	1749	1746	273	0.011	1.69	2.7	1746.0	1738.0	723	0.0111	1.9	6.4	13.49	**8.1**
OS9	1836	1809	232	0.116	6	1809	1808	1	1.000	16.13	0.0	1808.0	1807.0	1	1.0000	10.0	0.0	6.42	**3.9**
OS11	1754	1691	239	0.264	5	1691	1690	1	1.000	16.13	0.0	1690.0	1689.0	1	1.0000	10.0	0.0	4.74	**2.8**
OS12.1	1740	1720	279	0.072	9	1720	1686	584	0.058	3.89	2.5	1686.0	1685.0	1	1.0000	10.0	0.0	11.54	**6.9**
OS12.2	1740	1714	300	0.087	9	1714	1676	389	0.098	5.04	1.3	1676.0	1675.0	1	1.0000	10.0	0.0	10.16	**6.1**
OS10	1836	1791	300	0.150	7	1791	1751	494	0.081	4.59	1.8	1751.0	1622.0	2881	0.0448	3.8	12.6	21.52	**12.9**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)
Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max
Channel flow based on Manning's equation
Lag time = total travel time x 0.6

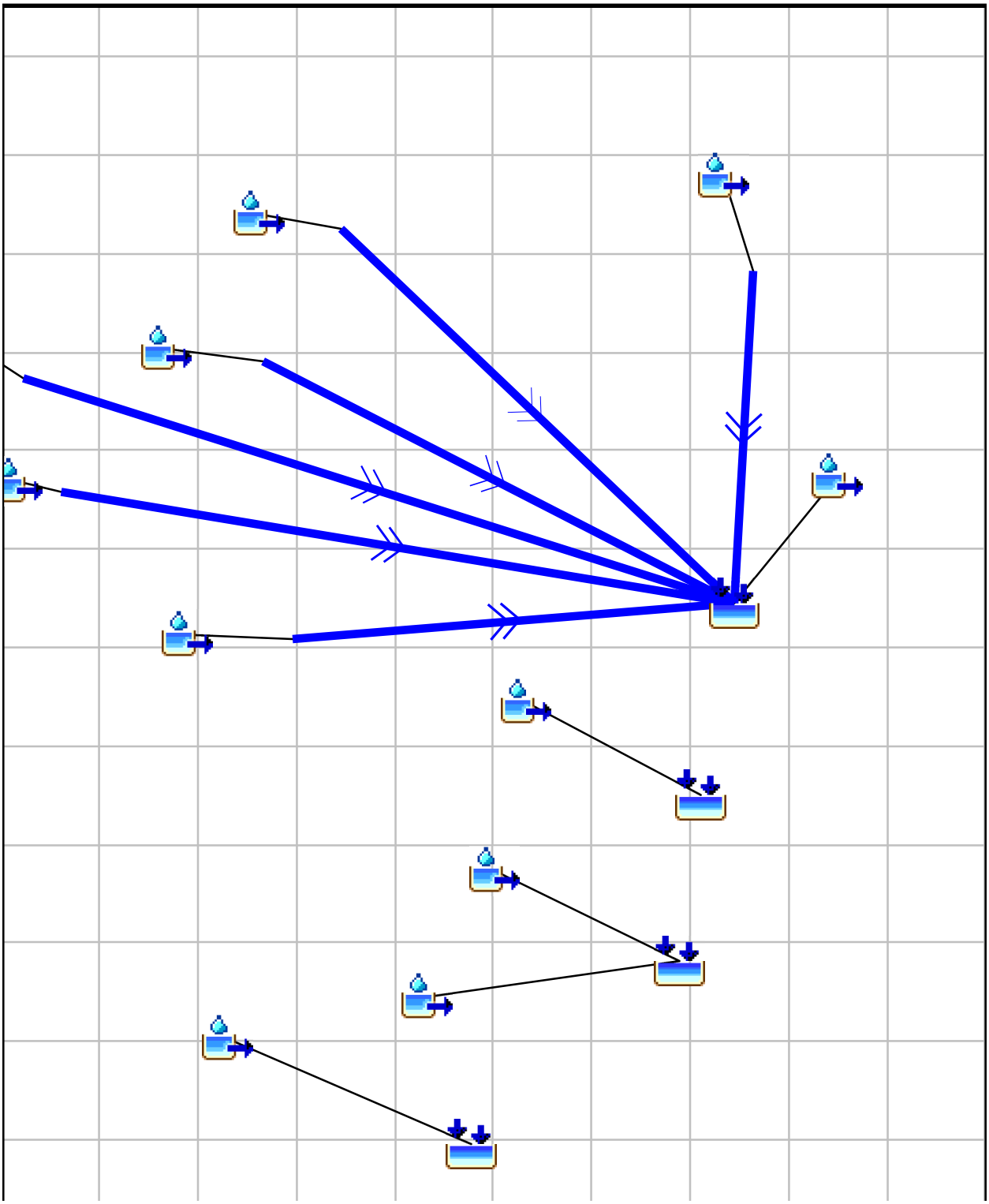
3) Loss RatePer SCS Method (now NRCS)
SOIL TYPES C throughout the watershed
SCS CURVE NUMBER(average moisture C Soil)=81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Ex

Sep 28 13:13:54 PDT 2018



Project: Dorado Oaks Simulation Run: Dorado Oaks 10yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Ex
End of Run: 02Jan2007, 00:00 Meteorologic Model: 10 YR-24IN
Compute Time: 28Sep2018, 13:11:49 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
OS3	0.2817	155.6	01Jan2007, 12:28	3.05
ROS3-1	0.2817	155.3	01Jan2007, 12:36	3.03
OS1	0.1690	99.6	01Jan2007, 12:24	3.06
ROS1-1	0.1690	99.2	01Jan2007, 12:37	3.03
OS2	0.0700	45.1	01Jan2007, 12:20	3.06
ROS2-1	0.0700	44.9	01Jan2007, 12:39	3.02
DOE03	0.0440	35.5	01Jan2007, 12:13	3.08
RDOE3-1	0.0440	35.1	01Jan2007, 12:20	3.06
DOE05	0.0275	29.6	01Jan2007, 12:09	3.51
RDOE5-1	0.0275	29.1	01Jan2007, 12:17	3.49
DOE02	0.0260	18.3	01Jan2007, 12:18	3.14
DOE01	0.0130	11.0	01Jan2007, 12:12	3.08
RDOE1-1	0.0130	10.8	01Jan2007, 12:28	3.05
CP1	0.6312	347.4	01Jan2007, 12:35	3.06
DOE10	0.1123	86.6	01Jan2007, 12:14	3.08
CP4	0.1123	86.6	01Jan2007, 12:14	3.08
DOE09	0.0380	40.7	01Jan2007, 12:07	3.09
DOE08	0.0075	7.6	01Jan2007, 12:08	3.09
CP3	0.0455	48.2	01Jan2007, 12:07	3.09
DOE07	0.0127	17.2	01Jan2007, 12:04	3.09
CP2	0.0127	17.2	01Jan2007, 12:04	3.09
DOE04	0.0121	18.5	01Jan2007, 12:04	3.45
CP6	0.0121	18.5	01Jan2007, 12:04	3.45
DOE06	0.0035	4.4	01Jan2007, 12:05	3.09
CP5	0.0035	4.4	01Jan2007, 12:05	3.09

Sub-basin data: Developed

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		18903.7		0.2817	0.2%
OS4			81	41245	0.9		10311.3		0.0015	25.0%
OS5			81	679099	15.6		0.0		0.0244	0.0%
OS6			81	642044	14.7		0.0		0.0230	0.0%
OS7			81	106844	2.5		0.0		0.0038	0.0%
OS8			81	40018	0.9		0.0		0.0014	0.0%
OS9			81	33056	0.8		0.0		0.0012	0.0%
OS10			81	209691	4.8		0.0		0.0075	0.0%
OS11			81	30937	0.7		0.0		0.0011	0.0%
OS12			81	89975	2.1		0.0		0.0032	0.0%
OS13			81	23113	0.5		0.0		0.0008	0.0%
OS14			81	221209	5.1		0.0		0.0079	0.0%
OS15			81	1929450	44.3		0.0		0.0692	0.0%
SW1			90	395421	9.1		316336.8		0.0142	80.0%
SW2			90	34536	0.8		24175.2		0.0012	70.0%
SW3			90	71520	1.6		50064.0		0.0026	70.0%
SW4			90	54101	1.2		37870.7		0.0019	70.0%
SW5			90	44205	1.0		30943.5		0.0016	70.0%
SW6			86	88059	2.0		44029.5		0.0032	50.0%
SW7			86	167017	3.8		83508.5		0.0060	50.0%
SW8			90	65418	1.5		45792.6		0.0023	70.0%
SW9			90	68930	1.6		48251.0		0.0025	70.0%
SW10			86	292446	6.7		146223.0		0.0105	50.0%
SW11			95	60668	1.4		57634.6		0.0022	95.0%
SW12			86	403007	9.3		201503.5		0.0145	50.0%
SW13			86	309449	7.1		154724.5		0.0111	50.0%
BS1			90	556046	12.8		389232.2		0.0199	70.0%
BS2			86	386025	8.9		193012.5		0.0138	50.0%
BS3			90	64049	1.5		57644.1		0.0023	90.0%
SW14			81	122297	2.8		0.0		0.0044	0.0%

2) Lag Time : Developed

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS4	1780	1768	100	0.120	5	1768	1768	0			0.0	1768.0	1768.0	0			-	4.71	**2.8**
OS5	1822	1790	300	0.107	12	1790	1770	500	0.040	3.23	2.6	1770.0	1754.0	510	0.0314	7.4	1.2	15.63	**9.4**
OS6	1754	1720	300	0.113	12	1720	1710	300	0.033	2.95	1.7	1710.0	1700.0	940	0.0106	4.3	3.7	16.96	**10.2**
OS7	1785	1760	200	0.125	8	1760	1740	87	0.230	7.74	0.2	1740.0	1740.0	0	0.0000	0.0	-	8.26	**5.0**
OS8	1810	1790	200	0.100	9	1790	1790	0	0.000	0.00	0.0	1790.0	1790.0	0	0.0000	0.0	-	8.82	**5.3**
OS9	1800	1776	100	0.240	4	1776	1760	270	0.059	3.93	1.1	1760.0	1760.0	0	0.0000	0.0	-	4.72	**2.8**
OS10	1750	1710	161	0.248	5	1710	1710	0	0.000	0.00	0.0	1710.0	1710.0	0	0.0000	0.0	-	5.16	**3.1**
OS11	1815	1805	30	0.333	1	1805	1800	0	0.000	0.00	0.0	1800.0	1800.0	0	0.0000	0.0	-	1.20	**0.7**
OS12	1761	1748	300	0.043	17	1748	1738	152	0.066	4.14	0.6	1738.0	1738.0	0	0.0000	0.0	-	17.67	**10.6**
OS13	1790	1775	95	0.158	4	1775	1775	0	0.000	0.00	0.0	1775.0	1775.0	0	0.0000	0.0	-	4.05	**2.4**
OS14	1734	1714	157	0.127	7	1714	1714	0	0.000	0.00	0.0	1714.0	1714.0	0	0.0000	0.0	-	6.60	**4.0**
OS15	1760	1732	300	0.093	13	1732	1732	0	0.000	0.00	0.0	1732.0	1624.0	2315	0.0467	9.0	4.3	16.85	**10.1**
SW1	1768	1767	100	0.010	13	1767	1754	950	0.014	1.89	8.4	1754.0	1754.0	0	0.0000	0.0	-	21.12	**12.7**
SW2	1755	1754	100	0.010	13	1754	1753	88	0.011	1.72	0.9	1753.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW3	1754	1753	100	0.010	13	1753	1752	88	0.011	1.72	0.9	1752.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW4	1752	1751	100	0.010	13	1751	1750	90	0.011	1.70	0.9	1750.0	1750.0	0	0.0000	0.0	-	13.61	**8.2**
SW5	1750	1749	100	0.010	13	1749	1748	88	0.011	1.72	0.9	1748.0	1748.0	0	0.0000	0.0	-	13.58	**8.2**
SW6	1805	1804	87	0.011	11	1804	1780	500	0.048	3.53	2.4	1780.0	1780.0	0	0.0000	0.0	-	13.13	**7.9**
SW7	1803	1802	100	0.010	13	1802	1789	590	0.022	2.39	4.1	1789.0	1789.0	0	0.0000	0.0	-	16.84	**10.1**
SW8	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW9	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW10	1755	1754	100	0.010	13	1754	1744	836	0.012	1.76	7.9	1744.0	1744.0	0	0.0000	0.0	-	20.63	**12.4**
SW11	1798	1797	24	0.042	2	1797	1761	847	0.043	3.33	4.2	1761.0	1761.0	0	0.0000	0.0	-	6.54	**3.9**
SW12	1755	1754	100	0.010	13	1754	1750	130	0.031	2.83	0.8	1750.0	1734.0	1000	0.0160	5.3	3.2	16.67	**10.0**
SW13	1753	1752	100	0.010	13	1752	1746	400	0.015	1.98	3.4	1746.0	1734.0	1200	0.0100	4.2	4.8	20.92	**12.6**
BS1	1754	1753	100	0.010	13	1753	1742	994	0.011	1.70	9.8	1742.0	1768.0	0	0.0000	0.0	-	22.49	**13.5**
BS2	1817	1816	100	0.010	13	1816	1768	710	0.068	4.20	2.8	1768.0	1768.0	0	0.0000	0.0	-	15.55	**9.3**
BS3	1762	1761	10	0.100	1	1761	1748	417	0.031	2.85	2.4	1748.0	1748.0	0	0.0000	0.0	-	3.24	**1.9**
SW14	1779	1757	100	0.220	4	1757	1749	720	0.011	1.70	7.1	1749.0	1749.0	0	0.0000	0.0	-	10.75	**6.5**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Loss RatePer SCS Method (now NRCS)

SOIL TYPES C throughout the watershed

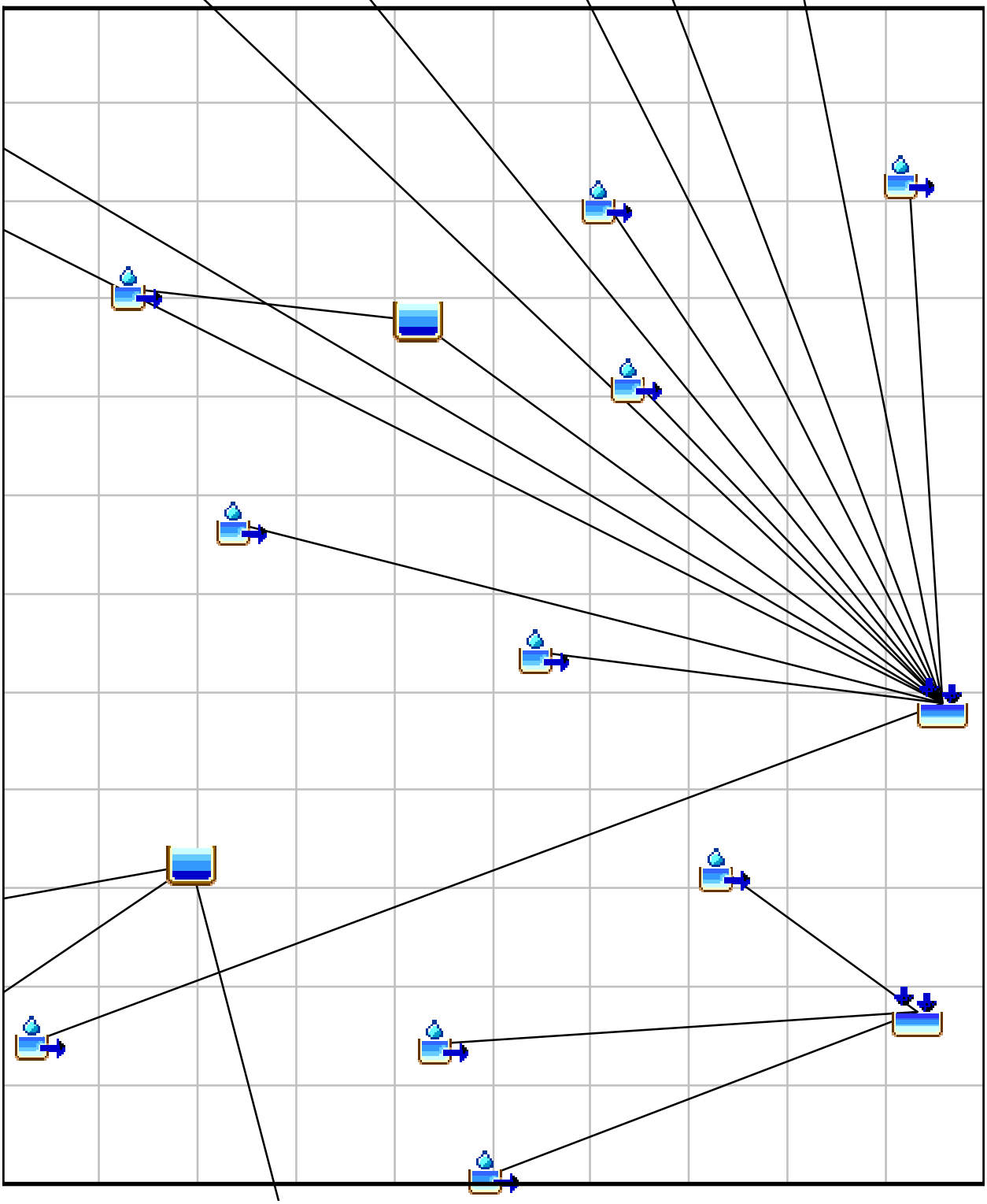
SCS CURVE NUMBER(average moisture C Soil)= 81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Dev

Sep 28 13:20:09 PDT 2018



Project: Dorado Oaks Simulation Run: DO Dev 10yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Dev
End of Run: 02Jan2007, 00:00 Meteorologic Model: 10 YR-24IN
Compute Time: 28Sep2018, 13:24:10 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.2817	155.7	01Jan2007, 12:28	45.9
OS01	0.169	90.0	01Jan2007, 12:30	27.5
OS02	0.07	41.4	01Jan2007, 12:21	9.9
OS04	0.0244	33.9	01Jan2007, 12:04	4.1
OS05	0.0244	21.7	01Jan2007, 12:10	4.0
OS06	0.023	19.7	01Jan2007, 12:11	3.8
BS01	0.0199	19.5	01Jan2007, 12:14	4.6
DB01	0.0199	7.1	01Jan2007, 12:40	4.5
SW01	0.0142	14.5	01Jan2007, 12:14	3.4
SW14	0.0044	3.1	01Jan2007, 12:15	0.6
SW03	0.0026	3.2	01Jan2007, 12:09	0.6
SW04	0.0019	2.3	01Jan2007, 12:09	0.4
SW05	0.0016	2.0	01Jan2007, 12:09	0.4
SW02	0.0012	1.5	01Jan2007, 12:09	0.3
OS09	0.0012	1.5	01Jan2007, 12:04	0.2
CP1	0.6395	330.4	01Jan2007, 12:24	105.4
OS15	0.0692	54.8	01Jan2007, 12:11	9.8
BS02	0.0138	14.9	01Jan2007, 12:10	2.9
BS03	0.0023	2.9	01Jan2007, 12:09	0.6
DB02	0.0161	3.8	01Jan2007, 12:55	3.1
SW12	0.0145	15.1	01Jan2007, 12:11	3.0
SW10	0.0105	9.9	01Jan2007, 12:13	2.2
OS12	0.0032	2.5	01Jan2007, 12:12	0.5
SW11	0.0022	3.7	01Jan2007, 12:05	0.5
CP4	0.1157	86.8	01Jan2007, 12:11	19.1
SW13	0.0111	10.4	01Jan2007, 12:14	2.3
OS14	0.0079	9.0	01Jan2007, 12:05	1.1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP3	0.0190	16.0	01Jan2007, 12:06	3.4
SW07	0.006	6.3	01Jan2007, 12:11	1.3
OS07	0.0038	4.4	01Jan2007, 12:06	0.6
SW06	0.0032	3.8	01Jan2007, 12:09	0.7
CP6	0.0130	13.6	01Jan2007, 12:08	2.6
OS10	0.0075	9.1	01Jan2007, 12:04	1.1
SW09	0.0025	3.1	01Jan2007, 12:09	0.6
SW08	0.0023	2.8	01Jan2007, 12:09	0.5
CP2	0.0123	13.7	01Jan2007, 12:05	2.2
OS13	0.008	10.3	01Jan2007, 12:04	1.1
OS08	0.0014	1.3	01Jan2007, 12:10	0.2
OS11	0.0011	1.5	01Jan2007, 12:03	0.2
CP5	0.0105	12.4	01Jan2007, 12:03	1.5

Appendix C

Sub-basin data : Existing

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
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OS7			81	338677	7.8		0.0		0.0121	0.0%
OS8			81	766594	17.6		0.0		0.0275	0.0%
OS9			81	96217	2.2		0.0		0.0035	0.0%
OS11			81	353742	8.1		0.0		0.0127	0.0%
OS12.1			81	208267	4.8		0.0		0.0075	0.0%
OS12.2			81	106354	2.4		0.0		0.0038	0.0%
OS10			81	3129774	71.8		0.0		0.1123	0.0%

2) Lag Time : Existing

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS5	1784	1764	300	0.067	14	1764	1748	539	0.030	2.78	3.2	1748.0	1747.0	1	1.0000	10.0	0.0	17.58	**10.6**
OS6	1810	1800	300	0.033	13	1800	1734	1210	0.055	3.77	5.4	1734.0	1698.0	1513	0.0238	2.8	9.1	27.44	**16.5**
OS4	1769	1759	300	0.033	13	1759	1744	838	0.018	2.16	6.5	1744.0	1743.0	1	1.0000	10.0	0.0	19.48	**11.7**
OS7	1805	1784	100	0.210	3	1784	1766	336	0.054	3.73	1.5	1766.0	1765.0	1	1.0000	10.0	0.0	4.09	**2.5**
OS8	1774	1749	166	0.151	4	1749	1746	273	0.011	1.69	2.7	1746.0	1738.0	723	0.0111	1.9	6.4	13.49	**8.1**
OS9	1836	1809	232	0.116	6	1809	1808	1	1.000	16.13	0.0	1808.0	1807.0	1	1.0000	10.0	0.0	6.42	**3.9**
OS11	1754	1691	239	0.264	5	1691	1690	1	1.000	16.13	0.0	1690.0	1689.0	1	1.0000	10.0	0.0	4.74	**2.8**
OS12.1	1740	1720	279	0.072	9	1720	1686	584	0.058	3.89	2.5	1686.0	1685.0	1	1.0000	10.0	0.0	11.54	**6.9**
OS12.2	1740	1714	300	0.087	9	1714	1676	389	0.098	5.04	1.3	1676.0	1675.0	1	1.0000	10.0	0.0	10.16	**6.1**
OS10	1836	1791	300	0.150	7	1791	1751	494	0.081	4.59	1.8	1751.0	1622.0	2881	0.0448	3.8	12.6	21.52	**12.9**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)
Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max
Channel flow based on Manning's equation
Lag time = total travel time x 0.6

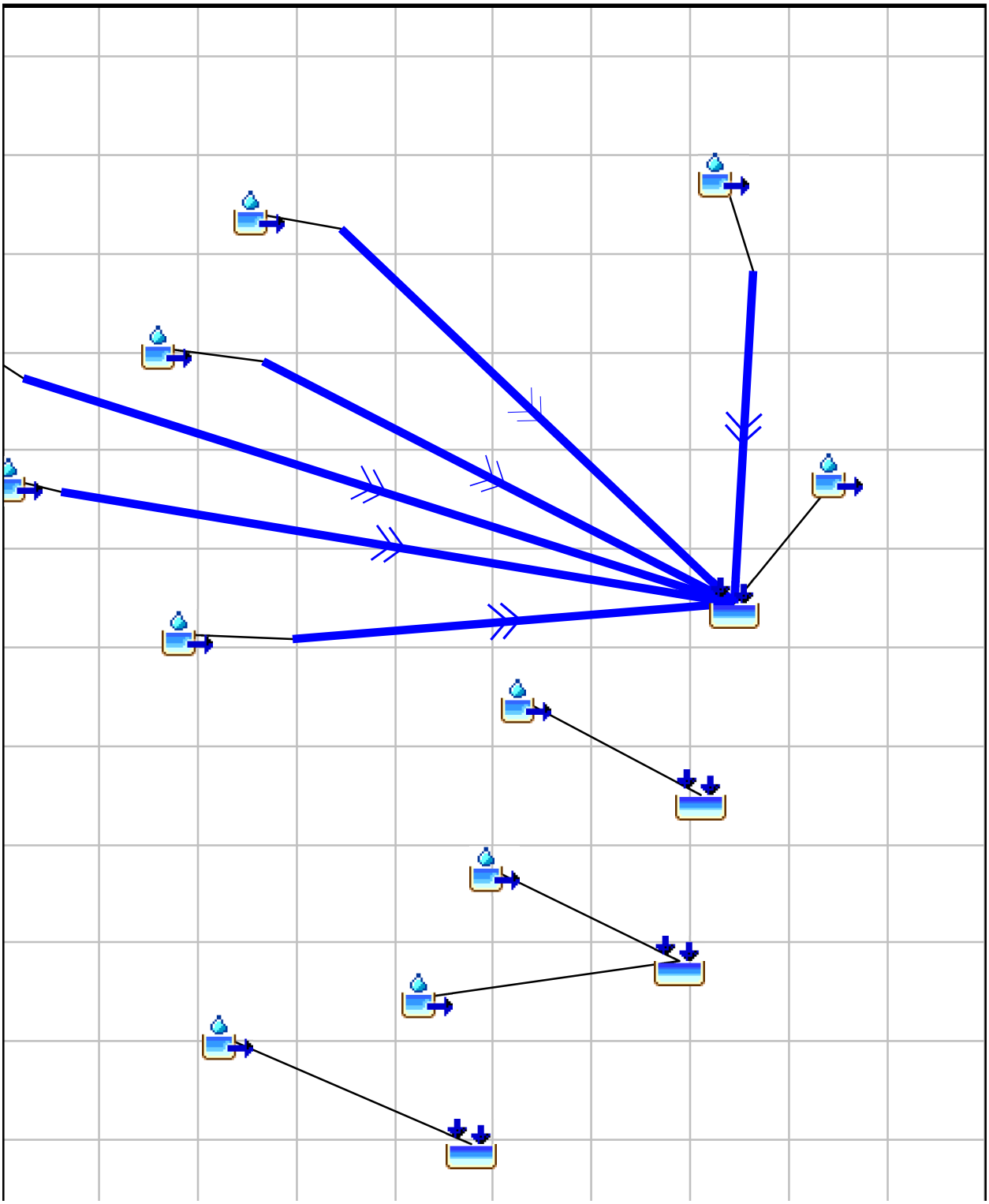
3) Loss RatePer SCS Method (now NRCS)
SOIL TYPES C throughout the watershed
SCS CURVE NUMBER(average moisture C Soil)=81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Ex

Sep 28 13:13:54 PDT 2018



Project: Dorado Oaks Simulation Run: Dorado Oaks 100-yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Ex
End of Run: 02Jan2007, 00:00 Meteorologic Model: 100 YR-24IN
Compute Time: 28Sep2018, 13:11:26 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS3	0.2817	256.6	01Jan2007, 12:28	77.0
ROS3-1	0.2817	256.2	01Jan2007, 12:35	76.6
OS1	0.169	163.7	01Jan2007, 12:24	46.3
ROS1-1	0.169	163.2	01Jan2007, 12:36	45.9
OS2	0.070	73.8	01Jan2007, 12:20	19.2
ROS2-1	0.070	73.5	01Jan2007, 12:37	19.0
DOE03	0.044	57.4	01Jan2007, 12:13	12.1
RDOE3-1	0.044	57.0	01Jan2007, 12:19	12.1
DOE05	0.0275	45.8	01Jan2007, 12:09	8.4
RDOE5-1	0.0275	45.0	01Jan2007, 12:16	8.3
DOE02	0.026	29.6	01Jan2007, 12:18	7.3
DOE01	0.013	17.7	01Jan2007, 12:12	3.6
RDOE1-1	0.013	17.6	01Jan2007, 12:26	3.6
CP1	0.6312	574.9	01Jan2007, 12:33	172.6
DOE10	0.1123	140.5	01Jan2007, 12:14	30.9
CP4	0.1123	140.5	01Jan2007, 12:14	30.9
DOE09	0.038	65.4	01Jan2007, 12:07	10.5
DOE08	0.0075	12.3	01Jan2007, 12:08	2.1
CP3	0.0455	77.6	01Jan2007, 12:07	12.6
DOE07	0.0127	27.6	01Jan2007, 12:04	3.5
CP2	0.0127	27.6	01Jan2007, 12:04	3.5
DOE04	0.0121	28.7	01Jan2007, 12:04	3.6
CP6	0.0121	28.7	01Jan2007, 12:04	3.6
DOE06	0.0035	7.0	01Jan2007, 12:05	1.0
CP5	0.0035	7.0	01Jan2007, 12:05	1.0

Sub-basin data: Developed

1) AREAS & % Impervious

SUB BASIN			CN	AREA (FT2)	AREA (AC)		Imp Area		AREA (SqM)	i (%)
OS1			81	4706316	108.0		0.0		0.169	0.0%
OS2			81	1965069	45.1		0.0		0.070	0.0%
OS3			81	7852483	180.3		18903.7		0.2817	0.2%
OS4			81	41245	0.9		10311.3		0.0015	25.0%
OS5			81	679099	15.6		0.0		0.0244	0.0%
OS6			81	642044	14.7		0.0		0.0230	0.0%
OS7			81	106844	2.5		0.0		0.0038	0.0%
OS8			81	40018	0.9		0.0		0.0014	0.0%
OS9			81	33056	0.8		0.0		0.0012	0.0%
OS10			81	209691	4.8		0.0		0.0075	0.0%
OS11			81	30937	0.7		0.0		0.0011	0.0%
OS12			81	89975	2.1		0.0		0.0032	0.0%
OS13			81	23113	0.5		0.0		0.0008	0.0%
OS14			81	221209	5.1		0.0		0.0079	0.0%
OS15			81	1929450	44.3		0.0		0.0692	0.0%
SW1			90	395421	9.1		316336.8		0.0142	80.0%
SW2			90	34536	0.8		24175.2		0.0012	70.0%
SW3			90	71520	1.6		50064.0		0.0026	70.0%
SW4			90	54101	1.2		37870.7		0.0019	70.0%
SW5			90	44205	1.0		30943.5		0.0016	70.0%
SW6			86	88059	2.0		44029.5		0.0032	50.0%
SW7			86	167017	3.8		83508.5		0.0060	50.0%
SW8			90	65418	1.5		45792.6		0.0023	70.0%
SW9			90	68930	1.6		48251.0		0.0025	70.0%
SW10			86	292446	6.7		146223.0		0.0105	50.0%
SW11			95	60668	1.4		57634.6		0.0022	95.0%
SW12			86	403007	9.3		201503.5		0.0145	50.0%
SW13			86	309449	7.1		154724.5		0.0111	50.0%
BS1			90	556046	12.8		389232.2		0.0199	70.0%
BS2			86	386025	8.9		193012.5		0.0138	50.0%
BS3			90	64049	1.5		57644.1		0.0023	90.0%
SW14			81	122297	2.8		0.0		0.0044	0.0%

2) Lag Time : Developed

SUB BASIN	Travel Time																		Lag time
	Overland flow					Shallow Concentrated						Channel flow						total travel time	
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
OS1	1830	1822	300	0.027	21	1822	1814	265	0.030	2.80	1.6	1814.0	1768.0	2343	0.0196	2.5	15.5	37.77	**22.7**
OS2	1875	1870	300	0.017	25	1870	1860	265	0.038	3.13	1.4	1860.0	1800.0	1210	0.0496	4.0	5.0	31.43	**18.9**
OS3	1813	1808	300	0.017	25	1808	1800	265	0.030	2.80	1.6	1800.0	1748.0	2534	0.0205	2.6	16.4	42.95	**25.8**
OS4	1780	1768	100	0.120	5	1768	1768	0			0.0	1768.0	1768.0	0			-	4.71	**2.8**
OS5	1822	1790	300	0.107	12	1790	1770	500	0.040	3.23	2.6	1770.0	1754.0	510	0.0314	7.4	1.2	15.63	**9.4**
OS6	1754	1720	300	0.113	12	1720	1710	300	0.033	2.95	1.7	1710.0	1700.0	940	0.0106	4.3	3.7	16.96	**10.2**
OS7	1785	1760	200	0.125	8	1760	1740	87	0.230	7.74	0.2	1740.0	1740.0	0	0.0000	0.0	-	8.26	**5.0**
OS8	1810	1790	200	0.100	9	1790	1790	0	0.000	0.00	0.0	1790.0	1790.0	0	0.0000	0.0	-	8.82	**5.3**
OS9	1800	1776	100	0.240	4	1776	1760	270	0.059	3.93	1.1	1760.0	1760.0	0	0.0000	0.0	-	4.72	**2.8**
OS10	1750	1710	161	0.248	5	1710	1710	0	0.000	0.00	0.0	1710.0	1710.0	0	0.0000	0.0	-	5.16	**3.1**
OS11	1815	1805	30	0.333	1	1805	1800	0	0.000	0.00	0.0	1800.0	1800.0	0	0.0000	0.0	-	1.20	**0.7**
OS12	1761	1748	300	0.043	17	1748	1738	152	0.066	4.14	0.6	1738.0	1738.0	0	0.0000	0.0	-	17.67	**10.6**
OS13	1790	1775	95	0.158	4	1775	1775	0	0.000	0.00	0.0	1775.0	1775.0	0	0.0000	0.0	-	4.05	**2.4**
OS14	1734	1714	157	0.127	7	1714	1714	0	0.000	0.00	0.0	1714.0	1714.0	0	0.0000	0.0	-	6.60	**4.0**
OS15	1760	1732	300	0.093	13	1732	1732	0	0.000	0.00	0.0	1732.0	1624.0	2315	0.0467	9.0	4.3	16.85	**10.1**
SW1	1768	1767	100	0.010	13	1767	1754	950	0.014	1.89	8.4	1754.0	1754.0	0	0.0000	0.0	-	21.12	**12.7**
SW2	1755	1754	100	0.010	13	1754	1753	88	0.011	1.72	0.9	1753.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW3	1754	1753	100	0.010	13	1753	1752	88	0.011	1.72	0.9	1752.0	1754.0	0	0.0000	0.0	-	13.58	**8.2**
SW4	1752	1751	100	0.010	13	1751	1750	90	0.011	1.70	0.9	1750.0	1750.0	0	0.0000	0.0	-	13.61	**8.2**
SW5	1750	1749	100	0.010	13	1749	1748	88	0.011	1.72	0.9	1748.0	1748.0	0	0.0000	0.0	-	13.58	**8.2**
SW6	1805	1804	87	0.011	11	1804	1780	500	0.048	3.53	2.4	1780.0	1780.0	0	0.0000	0.0	-	13.13	**7.9**
SW7	1803	1802	100	0.010	13	1802	1789	590	0.022	2.39	4.1	1789.0	1789.0	0	0.0000	0.0	-	16.84	**10.1**
SW8	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW9	1744	1743	100	0.010	13	1743	1742	90	0.011	1.70	0.9	1742.0	1742.0	0	0.0000	0.0	-	13.61	**8.2**
SW10	1755	1754	100	0.010	13	1754	1744	836	0.012	1.76	7.9	1744.0	1744.0	0	0.0000	0.0	-	20.63	**12.4**
SW11	1798	1797	24	0.042	2	1797	1761	847	0.043	3.33	4.2	1761.0	1761.0	0	0.0000	0.0	-	6.54	**3.9**
SW12	1755	1754	100	0.010	13	1754	1750	130	0.031	2.83	0.8	1750.0	1734.0	1000	0.0160	5.3	3.2	16.67	**10.0**
SW13	1753	1752	100	0.010	13	1752	1746	400	0.015	1.98	3.4	1746.0	1734.0	1200	0.0100	4.2	4.8	20.92	**12.6**
BS1	1754	1753	100	0.010	13	1753	1742	994	0.011	1.70	9.8	1742.0	1768.0	0	0.0000	0.0	-	22.49	**13.5**
BS2	1817	1816	100	0.010	13	1816	1768	710	0.068	4.20	2.8	1768.0	1768.0	0	0.0000	0.0	-	15.55	**9.3**
BS3	1762	1761	10	0.100	1	1761	1748	417	0.031	2.85	2.4	1748.0	1748.0	0	0.0000	0.0	-	3.24	**1.9**
SW14	1779	1757	100	0.220	4	1757	1749	720	0.011	1.70	7.1	1749.0	1749.0	0	0.0000	0.0	-	10.75	**6.5**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Loss RatePer SCS Method (now NRCS)

SOIL TYPES C throughout the watershed

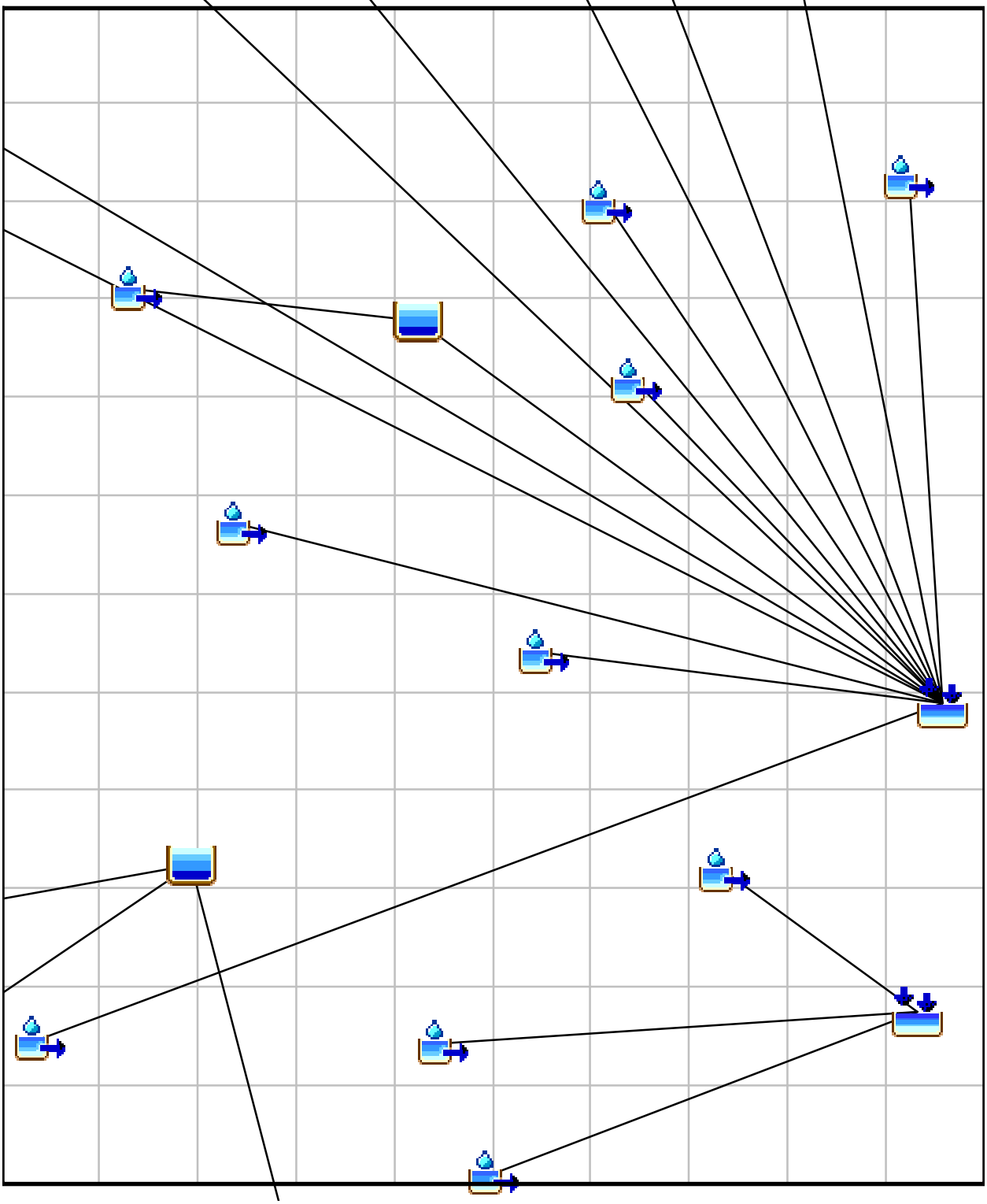
SCS CURVE NUMBER(average moisture C Soil)= 81

HEC-HMS

Project : Dorado Oaks

Basin Model : Dorado Oaks Dev

Sep 28 13:20:09 PDT 2018



Project: Dorado Oaks Simulation Run: DO Dev 100yr

Start of Run: 01Jan2007, 00:00 Basin Model: Dorado Oaks Dev
End of Run: 02Jan2007, 00:00 Meteorologic Model: 100 YR-24IN
Compute Time: 28Sep2018, 13:24:12 Control Specifications: 1 DAY

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.2817	256.7	01Jan2007, 12:28	77.0
OS01	0.169	148.7	01Jan2007, 12:30	46.1
OS02	0.07	71.1	01Jan2007, 12:20	17.6
OS04	0.0244	54.2	01Jan2007, 12:04	6.9
OS05	0.0244	35.1	01Jan2007, 12:10	6.7
OS06	0.023	31.9	01Jan2007, 12:11	6.3
BS01	0.0199	28.7	01Jan2007, 12:14	7.0
DB01	0.0199	10.3	01Jan2007, 12:43	6.8
SW01	0.0142	21.2	01Jan2007, 12:14	5.1
SW14	0.0044	5.2	01Jan2007, 12:15	1.1
SW03	0.0026	4.6	01Jan2007, 12:09	0.9
SW04	0.0019	3.4	01Jan2007, 12:09	0.7
SW05	0.0016	2.9	01Jan2007, 12:09	0.6
SW02	0.0012	2.1	01Jan2007, 12:09	0.4
OS09	0.0012	2.5	01Jan2007, 12:04	0.3
CP1	0.6395	546.2	01Jan2007, 12:24	176.5
OS15	0.0692	92.9	01Jan2007, 12:11	17.5
BS02	0.0138	22.4	01Jan2007, 12:10	4.5
BS03	0.0023	4.2	01Jan2007, 12:09	0.8
DB02	0.0161	6.0	01Jan2007, 12:54	4.8
SW12	0.0145	22.8	01Jan2007, 12:11	4.7
SW10	0.0105	15.1	01Jan2007, 12:13	3.4
OS12	0.0032	4.2	01Jan2007, 12:12	0.8
SW11	0.0022	5.3	01Jan2007, 12:05	0.8
CP4	0.1157	141.9	01Jan2007, 12:11	32.1
SW13	0.0111	15.8	01Jan2007, 12:14	3.6
OS14	0.0079	15.2	01Jan2007, 12:05	2.0

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP3	0.0190	26.0	01Jan2007, 12:06	5.6
SW07	0.006	9.5	01Jan2007, 12:11	2.0
OS07	0.0038	7.0	01Jan2007, 12:06	1.1
SW06	0.0032	5.6	01Jan2007, 12:09	1.1
CP6	0.0130	20.7	01Jan2007, 12:08	4.1
OS10	0.0075	15.4	01Jan2007, 12:04	1.9
SW09	0.0025	4.5	01Jan2007, 12:09	0.9
SW08	0.0023	4.1	01Jan2007, 12:09	0.8
CP2	0.0123	21.9	01Jan2007, 12:05	3.6
OS13	0.008	17.2	01Jan2007, 12:04	2.0
OS08	0.0014	2.1	01Jan2007, 12:10	0.4
OS11	0.0011	2.6	01Jan2007, 12:03	0.3
CP5	0.0105	20.9	01Jan2007, 12:03	2.7

Appendix D

Project # 27082.00
Dorado Oaks
Date: 09-25-2018
Storm Water Quality Calculations

Swale #	Design Intensity	Runoff Coefficient	Tributary Area	Design Flow	Swale Bottom Width	Side Slope	A	A/P	Q	Depth of flow[1]	Design Slope (1%)	Design Flow Velocity	Contact Time	Design Length
	in/hr		ac.	cfs	ft	ft/ft				in	ft/ft	ft/sec	min	ft
SW1	0.20	0.60	9.1	1.089	5.0	3	3.2500	0.541	1.310	6.0	0.010	0.3	10.0	201
SW2	0.20	0.60	0.8	0.095	2.0	3	0.5200	0.294	0.114	2.4	0.010	0.2	10.0	110
SW3	0.20	0.60	1.6	0.197	2.0	3	0.8700	0.368	0.239	3.6	0.010	0.2	10.0	136
SW4	0.20	0.60	1.2	0.149	2.0	3	0.7228	0.340	0.183	3.1	0.010	0.2	10.0	124
SW5	0.20	0.60	1.0	0.122	2.0	3	0.6187	0.318	0.146	2.8	0.010	0.2	10.0	118
SW6	0.20	0.60	2.0	0.243	2.0	3	1.0268	0.394	0.301	4.1	0.010	0.2	10.0	142
SW7	0.20	0.60	3.8	0.460	2.0	3	1.6027	0.470	0.561	5.6	0.010	0.3	10.0	172
SW8	0.20	0.60	1.5	0.180	2.0	3	0.8323	0.361	0.224	3.5	0.010	0.2	10.0	130
SW9	0.20	0.60	1.6	0.190	2.0	3	0.8323	0.361	0.224	3.5	0.010	0.2	10.0	137
SW10	0.20	0.60	6.7	0.806	5.0	3	2.7047	0.497	1.001	5.2	0.010	0.3	10.0	179
SW11	0.20	0.60	1.4	0.167	2.0	3	0.7587	0.347	0.196	3.2	0.010	0.2	10.0	132
SW12	0.20	0.60	9.3	1.110	5.0	3	3.3303	0.547	1.358	6.1	0.010	0.3	10.0	200
SW13	0.20	0.60	7.1	0.852	5.0	3	2.7808	0.504	1.043	5.3	0.010	0.3	10.0	184

GEOTECHNICAL ENGINEERING STUDY UPDATE
FOR
STONEHENGE SPRINGS

Faith Lane
Diamond Springs, California

Project No. E07309.002
June 2018

YOUNGDAHL
CONSULTING GROUP, INC.

Building Innovative Solutions

YOUNGDAHL CONSULTING GROUP, INC.
Building Innovative Solutions
1234 Glenhaven Court, El Dorado Hills, CA 95762
4300 Anthony Court, Unit D, Rocklin, CA 95677
ph 916.933.0633 fx 916.933.6482
www.youngdahl.net
30 YEARS

Stonehenge Springs, LLC
2700 South Azusa Avenue
West Covina, California 91792

Project No. E07309.002
4 June 2018

Attention: Mr. Kevin Sweeney

Subject: **STONEHENGE SPRINGS**
Faith Lane, Diamond Springs, California
GEOTECHNICAL ENGINEERING STUDY UPDATE

References:
1. Geotechnical Engineering Study for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 24 September 2017 (Project No. E07309.000).
2. NRCS Soil Survey Addendum Letter for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 17 December 2017 (Project No. E07309.000).
3. Summary of Additional Exploration for Stonehenge Springs, prepared by Youngdahl Consulting Group, Inc., dated 12 May 2008 (Project No. E07309.001).
4. Proposed Lotting for Stonehenge Springs, prepared by CTA Engineering and Surveying, dated 20 April 2018.
5. Executed Contract for Stonehenge Springs GES Update, prepared by Youngdahl Consulting Group, Inc., dated 11 May 2018 (Project No. E07309.002).

Dear Mr. Sweeney:

In accordance with your authorization, Youngdahl Consulting Group, Inc. has performed a Geotechnical Engineering Study Update for the project site located at the south end of Faith Lane in Diamond Springs, California. The purpose of this study was to perform an update to the Reference No. 1 report for use at the project site to address current standards of practice and the requirements of the 2016 California Building Code. Our scope was limited to a site reconnaissance, review of the previous reports (Reference Nos. 1 through 3), and preparation of this report per the Reference No. 5 contract.

Based upon our site reconnaissance and review of previous reports, it is our opinion that the primary geotechnical issues to be addressed consist of the existence of undocumented fills and previous grading activity, shallow bedrock conditions, and drainage related to the shallow bedrock. Due to the non-uniform nature of soils, other geotechnical issues may become more apparent during grading operations which are not listed above. The descriptions, findings, conclusions, and recommendations provided in this report are formulated as a whole; specific conclusions or recommendations should not be derived or used out of context. Please review the limitations and uniformity of conditions section of this report.

This report has been prepared for the exclusive use of Stonehenge Springs, LLC and their consultants, for specific application to this project, in accordance with generally accepted geotechnical engineering practice. Should you have any questions or require additional information, please contact our office at your convenience.

Very truly yours,
Youngdahl Consulting Group, Inc.

Devin S. Fielding
Staff Engineer

Reviewed By:

John C. Youngdahl, P.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
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Distribution: PDF to Client

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GEOTECHNICAL ENGINEERING STUDY UPDATE
FOR
STONEHENGE SPRINGS

1.0 INTRODUCTION

This report presents the results of our Geotechnical Engineering Study Update performed for the proposed residential development planned to be constructed at the south end of Faith Lane in Diamond Springs, California. An annotated vicinity map is provided on Figure A-1 to identify the approximate project location.

Purpose and Scope

The purpose of this study was to evaluate the surface conditions at the site, to update geotechnical information and design criteria, and to update geotechnical recommendations for the proposed project. The scope of this study includes the following:

- A review of previous reports, geotechnical data, and geologic data available to us at the time of our study;
- A field study consisting of a site reconnaissance;
- Engineering analysis of the data and information obtained from our previous involvement;
- Review and updating of geotechnical recommendations for earthwork construction and geotechnical design criteria for seismic conditions, shallow foundations, retaining walls, slabs on grade, underground utilities, and pavements;
- Preparation of this report summarizing our findings, conclusions, and recommendations regarding the above described information.

Project Understanding

Based on the Reference No. 4 plans, we understand that the proposed development is expected to include 76 attached units, 136 cluster units, and 156 single-family residences. Appurtenant construction is expected to include associated roads and utilities. The proposed construction is expected to be of wood frame construction and be supported by conventional shallow foundations with concrete slab-on-grade floors. The project area is irregularly shaped, extending south of Faith Lane in Diamond Springs, California.

Background

Review of available information and aerial photos indicate that the project site was previously graded in the northern portions of the property. Fills from 2 feet in depth were encountered along the eastern portion (west of existing Walker Drive and Fowler Lane), and the building pads and streets, which were partially graded to the northwest, appear to be entirely into cut.

If studies or plans pertaining to the site exist and are not cited as a reference in this report, we should be afforded the opportunity to review and modify our conclusions and recommendations as necessary.

2.0 FINDINGS

The following section describes our findings regarding the site conditions that we observed during our site reconnaissance. In addition, this section also provides the results of our geologic review and engineering assessment related to the project site.

Surface Observations
The project site is an irregularly shaped vacant parcel located at the southern end of Faith Lane in Diamond Springs, California and encompasses approximately 144 acres. The project limits include Faith Lane to the north, existing residences to the east and west, and open, undeveloped land to the south. Topography, aside from the existing graded areas, consists of moderate to low hills. Drainage swales with north/south orientations are present at various locations throughout the site. A pump station for sewer service is located in the northeast area of the site. Vegetation across the site includes moderate to thick growth of grasses, bushes and trees. Several bedrock outcrops were observed throughout the site. Bedrock was also visible in many of the areas cut during previous grading activity. Standing and slowly flowing water was observed in isolated low areas at various locations throughout the site. Isolated areas of trash and debris were present at various locations throughout the site.

Subsurface Conditions
The subsurface conditions encountered in 2007 for the development of the Reference No. 1 report primarily consisted of silty sands in a loose to medium dense and dry to moist condition overlying metavolcanic bedrock. Bedrock was encountered at depths ranging from 0 to 6 feet with the exception of test pits where undocumented fills were encountered. The fills are located at the east-middle area of the site. The depths of undocumented fills are highly variable and can range from approximately 8 feet to 20 feet. Please refer to Reference Nos. 1 and 3 for more detailed information of fill locations and profiles.

Groundwater Conditions
Groundwater conditions were not observed at excavated test pit locations in 2007. However, during our site reconnaissance on 31 May 2018, surface water (standing and slowly flowing) was observed at various locations throughout the project site possibly due to a relatively recent rain. Generally, subsurface water conditions vary in the foothill regions because of many factors such as, the proximity to bedrock, fractures in the bedrock, topographic elevations, and proximity to surface water. Some evidence of past repeated exposure to subsurface water may include black staining on fractures, clay deposits, and surface markings indicating previous seepage. Based on our experience in the area, at varying times of the year water may be perched on less weathered rock and/or present in the fractures and seems of the weathered rock found beneath the site.

Geologic Conditions
The geologic portion of this report included a review of geologic data pertinent to the site, and an interpretation of our observations and the Logs of Exploratory Test Pits excavated during the previous field studies. The site is located at the foot of the Sierra Foothills region of the Sierra Nevada Mountain Range. According to the 1:48,000 scale General Geology of the Placerville 15-Minute Quadrangle of the California State Geology map, the project site is underlain by highly weathered Mesozoic Granitic to Dioritic plutonic rocks, both of Mesozoic Age (Loyd and others, 1983); however, local conditions observed by a geologist during exploration indicates shallow metavolcanic bedrock is present as well. Weathering of these bedrock materials has contributed largely to the overburden soils on the subject site.

Seismicity
According to the Fault Activity Map of California and Adjacent Areas (Jennings, 2010) and the Alquist-Priolo Regulatory Maps, no active faults or Earthquake Fault Zones (Special Studies Zones) are located on the project site. Additionally, no evidence of recent or active faulting was observed during our previous field study. The nearest mapped faults to the site are related to the Bear Mountains and Melones Fault Zones (inactive). The Bear Mountains Fault Zone is located

approximately 10 kilometers west of the site. Branches of the Melones Fault Zone traverse through the northern portion of the site. The nearest mapped potentially active and active faults pertinent to the site are summarized in the following table.

Table 1: Local Active and Potentially Active Faults

Activity	Fault Name	Distance, Direction
Historic	Cleveland Hill	97 km NW
Historic	Dog Valley Fault	95 km NE
Active	Dunnigan Hills	90 km W
Active	North Tahoe Fault	80 km NE
Active	Polaris Fault	90 km NE
Active	West Tahoe Fault	68 km NE
Potentially Active	Maidu Fault	20 km NW

Based on our literature review of shear-wave velocity characteristics of geologic units in California (Wills and Silva; August 1998: Earthquake Spectra, Volume 14, No. 3) and subsurface interpretations, we recommend that the project site be classified as Site Class C in accordance with Section 1613.3.2 of the 2016 CBC and Table 20.3-1 of ASCE 7-10.

Earthquake Induced Liquefaction, Surface Rupture Potential, and Settlement

Liquefaction is the sudden loss of soil shear strength and sudden increase in porewater pressure caused by shear strains, as could result from an earthquake. Research has shown that saturated, loose to medium-dense sands with a silt content less than about 25 percent and located within the top 40 feet are most susceptible to liquefaction and surface rupture/lateral spreading.

Due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area and the relatively shallow depth to rock, the potential for seismically induced damage due to liquefaction, surface ruptures, and settlement is considered negligible. For the above-mentioned reasons mitigation for these potential hazards is not required for the development of this project.

Static and Earthquake Induced Slope Instability

The existing slopes on the project site were observed to have adequate vegetation on the slope face, appropriate drainage away from the slope face, and no apparent tension cracks or slump blocks in the slope face or at the head of the slope. Additionally, due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area, and the relatively shallow depth to rock, the potential for seismically induced slope instability for the existing slopes is considered negligible.

Soil Expansion Potential

The materials encountered in our explorations were non-plastic materials which are considered to be relatively non-expansive. We do not anticipate that special design considerations for expansive soils will need to be addressed for the design or construction of the proposed improvements. If expansive soils are encountered which were not disclosed during our studies, recommendations can be made at that time based on our observations.

Soil Corrosivity

A corrosivity testing suite consisting of soil pH, resistivity, sulfate, and chloride content tests were performed on selected soil samples for the development of the Reference No. 1 report. We are

not corrosion specialists and recommend that the results be evaluated by a qualified corrosion expert. The laboratory test results are summarized in Table 2, below.

Table 2: Corrosivity Summary

Location	Depth (ft)	Soil pH	Minimum Resistivity ohm-cm (x1000)	Chloride (ppm)	Sulfate (ppm)	Caltrans Environment	ACI Environment
TP-2	0-3	5.34	12.33	13.2	0.3	Potentially Corrosive	S0 (Not a Concern)
TP-9	0-5	5.14	14.47	7.0	0.1	Potentially Corrosive	S0 (Not a Concern)

According to Caltrans Corrosion Guidelines Version 2.1, January 2015, the test results appear to indicate a potentially corrosive environment. A certified corrosion engineer should be consulted for specific mitigation recommendations if metallic pipes, structural elements, or MSE structure backfill are designed to be in contact with or buried in soil. According to the 2016 California Building Code Section 1904.1 and ACI 318-14 Table 19.3.1.1, the test results indicate the onsite soils have a negligible potential for sulfide attack of concrete. Accordingly, Type I/II Portland cement is appropriate for use in concrete construction.

Naturally Occurring Asbestos

Asbestos is classified by the EPA as a known human carcinogen. Naturally occurring asbestos (NOA) has been identified as a potential health hazard. The California Geological Survey published a map in 2000 (Open File Report 2000-02) that qualitatively indicates the likelihood for NOA in western El Dorado County. The project site is identified as not being in a NOA review zone based on the published map.

3.0 DISCUSSION AND CONCLUSIONS

General

Based upon the results of our field explorations and analysis, it is our opinion that construction of the proposed improvements is feasible from a geotechnical standpoint, provided the recommendations contained in this report are incorporated into the design plans and implemented during construction. The native soils, rock, and/or engineered fills composed of like materials and processed and compacted as recommended below are considered suitable for support of the planned improvements. The existing fills and fill stockpiles are relatively loose and are not considered suitable for support of the proposed improvements in their current condition. Recommendations are presented below for the overexcavation and recompaction of the existing fill materials on the site.

4.0 SITE GRADING AND EARTHWORK IMPROVEMENTS

Site Preparation

Preparation of the project site should involve site drainage controls, dust control, clearing and stripping, overexcavation and recompaction of existing fills, and exposed grade compaction considerations. The following paragraphs state our geotechnical comments and recommendations concerning site preparation.

Site Drainage Controls: We recommend that initial site preparation involve intercepting and diverting any potential sources of surface or near-surface water within the construction zones. Because the selection of an appropriate drainage system will depend on the water quantity, season, weather conditions, construction sequence, and methods used by the contractor, final

decisions regarding drainage systems are best made in the field at the time of construction. All drainage and/or water diversion performed for the site should be in accordance with the Clean Water Act and applicable Storm Water Pollution Prevention Plan.

Swales and natural hillside drainage proposed to receive engineered fill may require the installation of canyon style drains (similar to Figure C-1, Appendix C) to mitigate for potential subsurface waters. Close coordination between the design professionals for placement and discharge of canyon style drains should be performed.

Dust Control: Dust control provisions should be provided for as required by the local jurisdiction's grading ordinance (i.e. water truck or other adequate water supply during grading).

Clearing and Stripping: Clearing and stripping operations should include the removal of all organic laden materials including trees, bushes, root balls, root systems, and any soft or loose soil generated by the removal operations. Surface grass stripping operations are necessary based upon our observations during our site visit. Short or mowed dry grasses may be pulverized and lost within fill materials provided no concentrated pockets of organics result. It is the responsibility of the grading contractor to remove excess organics from the fill materials. No more than 2 percent of organic material, by weight, should be allowed within the fill materials at any given location.

General site clearing should also include removal of any loose or saturated materials within the proposed structural improvement and pavement areas. A representative of our firm should be present during site clearing operations to identify the location and depth of potential fills not disclosed by this report, to observe removal of deleterious materials, and to identify any existing site conditions which may require mitigation or further recommendations prior to site development. Preserved trees may require tree root protection which should be addressed on an individual basis by a qualified arborist.

Addressing Existing Fills: Following general site clearing, all fills and fill stockpiles should be over-excavated down to firm native materials. Reference should be made to Reference No. 1 and 3 reports for anticipated fill locations. Due to the previous grading activities on the site, undocumented fills should also be anticipated to be present throughout the site. Any depressions extending below final grade resulting from the removal of fill materials or other deleterious materials should be properly prepared as discussed below and backfilled with engineered fill. Prior to placement of engineered fill, the exposed soil surfaces receiving fills should be scarified to a minimum depth of 8 inches, moisture conditioned as necessary, and compacted to at least 90 percent of the maximum dry density based on the ASTM D1557 test method. Additionally, test pits should be re-excavated and backfilled with engineered fill.

Exposed Grade Compaction: Exposed soil grades following initial site preparation activities and overexcavation operations should be scarified to a minimum depth of 8 inches and compacted to the requirements for engineered fill. Prior to placing fill, the exposed subgrades should be in a firm and unyielding state. Any localized zones of soft or pumping soils observed within a subgrade should either be scarified and recompacted or be overexcavated and replaced with engineered fill as detailed in the engineered fill section below.

Excavation Characteristics

The test pits were excavated for the preparation of the Reference No. 1 report using a CASE 580M backhoe equipped with an 18-inch-wide bucket. The degree of difficulty encountered in excavating the test pits is an indication of the effort that will be required for excavation during

construction. Based on our previous test pits, we expect that the site soils can be excavated using conventional earthmoving equipment such as a Caterpillar D8 or larger for mass grading and rubber tired backhoe for trench excavations.

The underlying rock materials can likely be excavated to depths of several feet using dozers equipped with rippers. We expect that the upper, weathered portion of the rock, indicated to extend 0 to 3 feet below the surface at most locations, will require use of a Caterpillar D8 equipped with a single or multiple shank rippers, or similar equipment. We anticipate that a ripper equipped D8 can penetrate at least as deep as our test pits at most locations with moderate effort. Deeper excavation into the less weathered rock may require heavier equipment, such as a D9, or a D10. Blasting cannot be ruled out in areas of resistant rock.

Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. When hard rock is encountered, we should be contacted to provide additional recommendations prior to performing an alternative such as blasting.

Utility trenches will likely encounter hard rock excavation conditions especially in deeper cut areas. Utility contractors should be prepared to use special rock trenching equipment such as large excavators (CAT 235 or CAT 245 or equivalent). Blasting to achieve utility line grades, especially in planned cut areas, cannot be precluded. Water inflow into any excavation approaching hard rock surface is likely to be experienced in all but the driest summer and fall months. Pre-ripping during mass grading may be beneficial and should be considered with the Geotechnical Engineer prior to, or during mass grading.

Soil Moisture Considerations

The near-surface soils may become partially or completely saturated during the rainy season. Grading operations during this time period may be difficult since compaction efforts may be hampered by saturated materials. Therefore, we suggest that consideration be given to the seasonal limitations and costs of winter grading operations on the site. Special attention should be given regarding the drainage of the project site.

If the project is expected to work through the wet season, the contractor should install appropriate temporary drainage systems at the construction site and should minimize traffic over exposed subgrades due to the moisture-sensitive nature of the on-site soils. During wet weather operations, the soil should be graded to drain and should be sealed by rubber tire rolling to minimize water infiltration.

Compaction Equipment

In areas to receive structural fill, a Caterpillar 825 steel-wheel compactor, large vibratory padded drum compactor, or approved equivalent should be employed as a minimum to facilitate breakdown of oversize bedrock materials and generation of soil fines during the fill placement process. If the quantity of rock fragments in the fills precludes traditional compaction testing, then the proposed fills should be compacted using method specifications as indicated below.

Engineered Fill Criteria

All materials placed as fills on the site should be placed as “Engineered Fill" which is observed, tested, and compacted as described in the following paragraphs.

Suitability of Onsite Materials: We anticipate that a large amount of onsite soils will be generated during mass grading operations. We expect that soil generated from excavations on the site,

excluding deleterious material, may be used as engineered fill provided the material does not exceed the maximum size specifications listed below.

Rock fragments or boulders exceeding 12 inches in maximum dimension should not be placed within the upper five feet of site grades or utility corridors. Boulders over 18 inches in maximum dimension should be placed within the deeper portions of fill embankments below a depth of 5 feet and a minimum of 5 feet from the finish slope face. The individual boulders should be spaced such that compaction of finer rock and soil materials between the boulders can be achieved with the equipment being used for compaction. Materials placed between the boulders should consist of predominantly soil and rock less than 12 inches in maximum dimension. The soil/rock mixture should be thoroughly mixed and placed between the boulders so as to preclude nesting or the formation of voids. Should insufficient deep fill areas exist for oversize rock disposal, the contractor should either dispose of the excess materials to an offsite location or mechanically reduce the rocks to less than 12 inches.

Import Materials: If imported fill material is needed for this project, import material should be approved by our firm prior to transporting it to the project. It is preferable that import material meet the following requirements:

1. Plasticity index not to exceed 12;
2. "R"-value of equal to or greater than 40;
3. Should not contain rocks larger than 6 inches in diameter;
4. Not more than 15 percent passing through the No. 200 sieve.

If these requirements are not met, additional testing and evaluation may be necessary to determine the appropriate design parameters for foundations, pavement, and other improvements.

Fill Placement and Compaction: All areas proposed to receive fill should be scarified to a minimum depth of 8 inches, moisture conditioned as necessary, and compacted to at least 90 percent of the maximum dry density based on the ASTM D1557 test method. The fill should be placed in thin horizontal lifts not to exceed 12 inches in uncompacted thickness. The fill should be moisture conditioned as necessary and compacted to a relative compaction of not less than 90 percent based on the ASTM D1557 test method. The upper 8 inches of fills placed under proposed pavement areas should be compacted to a relative compaction of not less than 95 percent based on the ASTM D1557 test method.

To mitigate the potential for deep fill settlement, all fills placed deeper than 10 feet from finished grade should be compacted to a minimum of 95 percent relative compaction. The fills should be placed at a minimum of two percent over optimum moisture content.

Fill soil compaction should be evaluated by means of in-place density tests performed during fill placement so that adequacy of soil compaction efforts may be determined as earthwork progresses, or by method specification if the quantity of rock fragments in the fills preclude traditional compaction testing. This will likely include the excavation of test pits within the fill materials to observe and document that a uniform over-optimum moisture condition and absence of large and/or concentrated voids has been achieved prior to additional fill placement.

Method Specification: Soils exceeding 30 percent rock by mass may be considered non-testable by conventional methods. The materials may be placed as engineered fill if placed in accordance with the following method specification during full time observation by a representative of our firm.

Soils should be moisture conditioned and compacted in place by a minimum of four completely covering passes with a Caterpillar 825, or approved equivalent. The compactor's last two passes should be at 90 degrees to the initial passes. In areas where 95 percent relative compaction is designated, an additional two passes should be applied in each direction, with three completely covering passes made at 90 degrees to the initial three passes. Engineered fill should be constructed in lifts not exceeding 12 inches in uncompacted thickness, moisture conditioned and compacted in accordance with the above specification. Additional passes as deemed necessary during fill placement to achieve the desired condition based upon field conditions may be recommended.

Slope Configuration and Grading

The project site is proposed to have cuts and fill with a maximum slope orientation of 2H:1V (Horizontal:Vertical). Generally a cut slope orientation of 2H:1V is considered stable with the material types encountered on the site. A fill slope constructed at the same orientation is considered stable if compacted to the engineered fill recommendations as stated in the recommendations section of this report. All slopes should have appropriate drainage and vegetation measures to minimize erosion of slope soils.

Placement of Fills on Slopes: Placement of fill material on natural slopes should be stabilized by means of keyways and benches. Where the slope of the original ground equals or exceeds 5H:1V, a keyway should be constructed at the base of the fill. The keyway should consist of a trench excavated to a depth of at least two feet into firm, competent materials. The keyway trench should be at least 10 feet wide or as designated by our firm based on the conditions at the time of construction. Benches should be cut into the original slope as the filling operation proceeds. Each bench should consist of a level surface excavated at least six feet horizontally into firm soils or four feet horizontally into rock. The rise between successive benches should not exceed 36 inches. The need for subdrainage should be evaluated at the time of construction. Refer to Figure C-2 in Appendix C for typical keyway and bench construction.

Slope Face Compaction: All slope fills should be laterally overbuilt and cut back such that the required compaction is achieved at the proposed finish slope face. As a less preferable alternative, the slope face could be track walked or compacted with a wheel. If this second alternative is used, additional slope maintenance may be necessary.

Slope Drainage: Surface drainage should not be allowed to flow uncontrolled over any slope face. Adequate surface drainage control should be designed by the project civil engineer in accordance with the latest applicable edition of the CBC. All slopes should have appropriate drainage and vegetation measures to minimize erosion of slope soils.

Underground Improvements

Trench Excavation: Trenches or excavations in soil should be shored or sloped back in accordance with current OSHA regulations prior to persons entering them. The potential use of a shield to protect workers cannot be precluded. Refer to the Excavation Characteristics section of Site Grading and Improvements of this report for anticipated excavation conditions.

Backfill Materials: Backfill materials for utilities should conform to the requirements of the local jurisdiction. It should be realized that permeable backfill materials will likely carry water at some time in the future.

When backfilling within structural footprints, compacted low permeability materials are recommended to be used a minimum of 5 feet beyond the structural footprint to minimize moisture

intrusion. If the materials are too rocky, they may need to be screened prior to backfill in order to limit pipe damage. If a permeable material is used as backfill within this zone, subdrainage mitigation may be required. In addition, if the structure is oriented below the roadway and associated utilities, grout cutoffs and/or plug and drains around all utility penetrations are useful to keep moisture out from underneath the structure.

A common problem occurs on sites graded with large equipment and rocky fill materials where the excavated spoils from the lot utilities are too rocky to place as engineered fill back in the trench with the common compaction practices employed by the subcontractors installing these utilities. We recommend that, where excavated soils are too rocky to place and compact to a tight condition with low void space, these materials be replaced with a proper import material for compaction.

Backfill Compaction: Backfill compaction should conform to the requirements of the local jurisdiction. Where backfill compaction is not specified by the local jurisdiction, the backfill should be compacted to a minimum of 90 percent relative compaction per the ASTM D1557 test method. Compaction should be accomplished using lifts which do not exceed 12 inches when compacting with a backhoe or larger equipment equipped with a compaction wheel. However, thickness of the lifts should be determined by the contractor. If the contractor can achieve the required compaction using thicker lifts, the method may be judged acceptable based on field verification by a representative of our firm using standard density testing procedures. Lightweight compaction equipment may require thinner lifts to achieve the required densities.

Drainage Considerations: In developments with the potential for a perched groundwater condition (i.e. shallow bedrock), underground utilities can become collection points for subsurface water. Due to this condition, we recommend plug and drains within the utility trenches (Figure C-3, Appendix C) to collect and convey water to the storm drain system or other approved outlet. Temporary dewatering measures may be necessary and could include the installation of submersible pumps and/or point wells. Once plans are developed, the civil engineer should coordinate with us to discuss the locations of plug and drains.

5.0 DESIGN RECOMMENDATIONS

Seismic Criteria

Based on the 2016 California Building Code, Chapter 16, and our site investigation findings, the following seismic parameters are recommended from a geotechnical perspective for structural design. The final choice of design parameters, however, remains the purview of the project structural engineer.

Table 3: Seismic Design Parameters

2016 CBC	ASCE 7-10	Seismic Parameter	Recommended Value
	Table 20.3-1	Site Class	C
Figure 1613.3.1(1)		Short-Period MCE at 0.2s, S_S	0.460g
Figure 1613.3.1(2)		1.0s Period MCE, S_1	0.227g
Table 1613.3.3(1)		Site Coefficient, F_a	1.200
Table 1613.3.3(2)		Site Coefficient, F_v	1.573
Equation 16-37		Adjusted MCE Spectral Response Parameters, $S_{MS} = F_a S_s$	0.552g
Equation 16-38		Adjusted MCE Spectral Response Parameters, $S_{M1} = F_v S_1$	0.357g
Equation 16-39		Design Spectral Acceleration Parameters, $S_{DS} = ⅔ S_{MS}$	0.368g
Equation 16-40		Design Spectral Acceleration Parameters, $S_{D1} = ⅔ S_{M1}$	0.238g
Table 1613.3.5(1)		Seismic Design Category (Short Period), Occupancy I to III	C
Table 1613.3.5(1)		Seismic Design Category (Short Period), Occupancy IV	C
Table 1613.3.5(2)		Seismic Design Category (1-Second Period), Occupancy I to IV	D
	Figure 22-7	Maximum Considered Earthquake Geometric Mean (MCE_C) PGA	0.151g
	Table 11.8-1	Site Coefficient F_{PGA}	1.200
	Equation 11.8-1	$PGA_M = F_{PGA}$ PGA	0.181g

*Based on the online calculator available at http://earthquake.usgs.gov/designmaps/us/application.php

Shallow Conventional Foundations

We offer the following comments and recommendations for purposes of design and construction of shallow continuous and/or isolated pad foundations. The provided minimums do not constitute a structural design of foundations which should be performed by the structural engineer. Our firm should be afforded the opportunity to review the project grading and foundation plans to confirm the applicability of the recommendations provided below. Modifications to these recommendations may be made at the time of our review. In addition to the provided recommendations, foundation design and construction should conform to applicable sections of the 2016 California Building Code.

Foundation Bearing Capacities: An allowable dead plus live load bearing pressure of 2,500 psf may be used for design of conventional shallow foundations based on firm native soils or engineered fills and 4,000 for foundation based on weathered bedrock. The allowable pressures are for support of dead plus live loads and may be increased by 1/3 for short-term wind and seismic loads.

Foundation Lateral Pressures: Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.35 may be utilized for sliding resistance at the base of conventional shallow foundations in firm native materials or engineered fill. A passive resistance of 350 pcf equivalent fluid weight may be used against the side of

conventional shallow footings in firm native soil or engineered fill. If friction and passive pressures are combined, the lesser value should be reduced by 50 percent.

Foundation Settlement: A total settlement of less than 1 inch is anticipated; a differential settlement of ½ of the total is anticipated where foundations are bearing on like materials. This settlement is based upon the assumption that foundation will be sized and loaded in accordance with the recommendations in this report.

Foundation Configuration: Conventional shallow foundations should be a minimum of 12 inches wide and founded a minimum of 12 inches below the lowest adjacent soil grade for one and two-story slab-on-grade single-family residences. Conventional shallow foundations should be a minimum of 12 inches wide and 18 inches below the lowest adjacent soil grade for larger single-family configurations and multi-family structures. Isolated pad foundation should be a minimum of 24 inches in diameter. Footings on sloping ground with a gradient of 5H:1V or less should be constructed level and imbedded a minimum of 18 inches below the lowest adjacent grade.

Foundation reinforcement should be provided by the structural engineer. The reinforcement schedule should account for typical construction issues such as load consideration, concrete cracking, and the presence of isolated irregularities. At a minimum, we recommend that continuous footing foundations for single family residences be reinforced with two No. 4 reinforcing bars, one located near the bottom of the footing and one near the top of the stem wall. Where foundations for single family residences are constructed within a cut-fill transition, soil to rock interface, or over minor surface irregularities (i.e. point load conditions within resistant bedrock), as a consideration to span these localized differential irregularities, we suggest that structural footing reinforcing steel be doubled top and bottom (minimum, four No. 4 reinforcing bars, two each top and bottom) extending a minimum of 10 feet continuous length on both sides of the transition/irregularity. Reinforcing steel for multi-family residential structures should consist of a minimum of four No. 4 reinforcing bars; two each top and bottom at all areas of the foundation.

All footings should be founded below an imaginary 2H:1V plane projected up from the bottoms of adjacent footings and/or parallel utility trenches, or to a depth that achieves a minimum horizontal clearance of 6 feet from the outside toe of the footings to the slope face, whichever requires a deeper excavation.

Subgrade Conditions: Footings should never be cast atop soft, loose, organic, slough, debris, nor atop subgrades covered by ice or standing water. A representative of our firm should be retained to observe all subgrades during footing excavations and prior to concrete placement so that a determination as to the adequacy of subgrade preparation can be made.

Shallow Footing / Stemwall Backfill: All footing/stemwall backfill soil should be compacted to at least 90 percent of the maximum dry density (based on ASTM D1557).

Crawlspace: If the exterior grades are planned to be higher in elevation than the interior crawlspace grades, a foundation subdrain is recommended. The subdrain should be consist of a trench excavated to a minimum of 2 feet below the crawlspace floor, sloping at a minimum of 1 percent to drain and filled with ¾ inch crushed rock wrapped in filter fabric such as Mirafi 140NC or equivalent. A layer of 10 mil visquene should be placed against the foundation, slope down to the trench, and line the building side, base, and lower 4 inches of the non-building side. A 12 inch compacted soil cap should be placed over the drain to protect the drain elements. A 4 inch rigid wall perforated drain pipe should be placed at the base of the trench and sloping at a gradient of 1 percent toward the outlet.

Ventilation for the crawlspace should meet minimum code requirements as well as be uniformly spaced around the perimeter of the structures.

Differential Support Conditions: Differential support conditions may be a concern where fills are placed and compacted for construction of a building pad and the proposed building will span from a native to deep fill condition (i.e. fills greater than 10 feet). In order to mitigate the potential for differential settlement, overexcavation of the cut portion of the building pad, deepening of the foundations or adjustment of compaction requirements may be recommended. We should be afforded the opportunity to review the construction plans in order to develop site specific recommendations regarding differential conditions.

Retaining Walls

Our design recommendations and comments regarding retaining walls for the project site are discussed below.

Foundation Design Parameters: An allowable dead plus live load bearing pressure of 2,500 psf may be used for design of conventional shallow foundations based on firm native soils or engineered fills and 4,000 for foundation based on weathered bedrock. The allowable pressures are for support of dead plus live loads and may be increased by 1/3 for short-term seismic loads.

Foundation Lateral Pressures: Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.35 may be utilized for sliding resistance at the base of conventional shallow foundations in firm native materials or engineered fill. A passive resistance of 350 pcf equivalent fluid weight may be used against the side of conventional shallow footings in firm native soil or engineered fill. If friction and passive pressures are combined, the lesser value should be reduced by 50 percent.

Retaining Wall Lateral Pressures: Based on our observations and testing, the retaining wall should be designed to resist lateral pressure exerted from a soil media having an equivalent fluid weight provided in Table 4, below. In accordance with Section 1803.5.12.1 of the 2016 California Building Code, application of the seismic design values for earthquake loading are required for retaining walls supporting more than 6 feet of backfill.

Table 4: Retaining Wall Pressures

Wall Type	Wall Slope Configuration	Equivalent Fluid Weight (pcf)	Surcharge Load (psf)*	Lateral Pressure Coefficient	Earthquake Loading (plf)***	
Free Cantilever	Flat	40	per structural	0.33	$5H^2$	Applied 0.6H above the base of the wall
	2H:1V	60	per structural	0.50		
Restrained**	Flat	60	per structural	0.50	$19H^2$	

* The surcharge loads should be applied as uniform loads over the full height of the walls as follows: Surcharge Load (psf) = (q) (K), where q = surcharge in psf, and K = coefficient of lateral pressure. Final design is the purview of the project structural engineer.

** Restrained conditions shall be defined as walls which are structurally connected to prevent flexible yielding, or rigid wall configurations (i.e. walls with numerous turning points) which prevent the yielding necessary to reduce the driving pressures from an at-rest state to an active state.

*** Section 1803.5.12 of the 2016 California Building Code states that a determination of lateral pressures on basement and retaining walls due to earthquake loading shall be provided for structures to be designed in Seismic Design Categories D, E or F (Load value derived from Wood (1973) and modified by Whitman (1991)).

Mechanically Stabilized Earth Walls: If keyed or interlocking non-mortared walls such as Keystone, Baselite, Allen Block, or rockery walls are utilized, the following soil parameters would be applicable for design within on-site, native materials:

Table 5: Modular Retaining Wall Design Parameters

Internal Angle of Friction	Cohesion	Bulk Unit Weight
31°	0 psf	120 psf

Site Wall Drainage: The above criteria are based on fully drained conditions as detailed in the attached Figure C-4, Appendix C. For these conditions, we recommend that a blanket of filter material be placed behind all proposed walls. The blanket of filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to within 12 inches of the ground surface. The filter material should conform to Class One, Type B permeable material as specified in Section 68 of the California Department of Transportation Standard Specifications, current edition. A clean ¾ inch crushed rock is also acceptable, provided filter fabric is used to separate the open graded gravel/rock from the surrounding soils. The top 12 inches of wall backfill should consist of a compacted soil cap. A filter fabric should be placed on top of the gravel filter material to separate it from the soil cap. A 4 inch diameter drain pipe should be installed near the bottom of the filter blanket with perforations facing down. The drainpipe should be underlain by at least 4 inches of filter-type material. An adequate gradient should be provided along the top of the foundation to discharge water that collects behind the retaining wall to a controlled discharge system.

The configuration of a long retaining wall generally does not allow for a positive drainage gradient within the perforated drain pipe behind the wall since the wall footing is generally flat with no gradient for drainage. Where this condition is present, to maintain a positive drainage behind the walls, we recommend that the wall drains be provided with a discharge to an appropriate non-erosive outlet a maximum of 50 feet on center. **In addition, if the wall drain outlets are temporarily stubbed out in front of the walls for future connection during home construction, it is imperative that the outlets be routed into the tight pipe area drainage system and not buried and rendered ineffective.**

Basement Wall Drainage: Based on our experience in the project area, excavation into bedrock to create a daylight basement condition may have the potential for creating moisture related problems within the underlying slab on grade areas of the daylight basement (i.e. wet slab conditions associated with seepage through bedrock fractures, perched groundwater, etc.). The following recommendations have been provided to mitigate the potential for the abovementioned moisture related issues.

The configuration of a long retaining wall generally does not allow for a positive drainage gradient within the perforated drain pipe behind the wall since the wall footings are generally flat with no gradient for drainage. Where this condition is present, to maintain positive drainage behind the walls, we recommend that the length of the wall drain be broken up into segments of 20 foot lengths that will allow for drainage outlets within the central portion of the drain segment. To accomplish this, we recommend that the perforated pipe be installed in contact with the top of the footing and sleeved with a tight pipe through the footing as detailed on Figure C-5, Appendix C. The drain should be installed in a trench and directed to a non-erosive outlet. Once the drain enters the footing, the perforated drain pipe should transition to a non-perforated rigid wall pipe. A second perforated pipe should be installed within the trench as detailed on Figure C-5, Appendix C. The trench should be backfilled with crushed rock up to finished pad grade so that it contacts

the crushed rock beneath the slab and functions as a slab underdrain system. The drain trenches should be excavated to a depth such that they are below any plumbing trenches, so that any water that may accumulate in those trenches can also be drained.

The final drainage configuration should be addressed prior to the completion of pad grading operations, so that a determination can be made, based on the geotechnical and/or geologic conditions observed, where installation of the wall drain outlets/slab underdrain system would be most beneficial. In addition, pre-excavation of the drainage trenches could be performed with the large grading equipment on the site. A representative from our firm should be present during these operations to provide additional consultation services as field conditions dictate.

Slab-on-Grade Construction

It is our opinion that soil-supported slab-on-grade floors could be used for the main floors of the structures, contingent on proper subgrade preparation. Often the geotechnical issues regarding the use of slab-on-grade floors include proper soil support and subgrade preparation, proper transfer of loads through the slab underlayment materials to the subgrade soils, and the anticipated presence or absence of moisture at or above the subgrade level. We offer the following comments and recommendations concerning support of slab-on-grade floors. The slab design (concrete mix, reinforcement, joint spacing, moisture protection, and underlayment materials) is the purview of the project Structural Engineer.

Slab Subgrade Preparation: All subgrades proposed to support slab-on-grade floors should be prepared and compacted to the requirements of engineered fill as discussed in the Site Grading and Improvements section of this report.

Slab Underlayment: As a minimum for slab support conditions, the slab should be underlain by a minimum 4 inch crushed rock layer and covered by a minimum 10-mil thick moisture retarding plastic membrane. An optional 1 inch blotter sand layer above the plastic membrane is sometimes used to aid in curing of the concrete in commercial structures. The blotter layer can become a reservoir for excessive moisture if inclement weather occurs prior to pouring the slab, excessive water collects in it from the concrete pour, or an external source of water enters above or bypasses the membrane. The membrane may only be functional when it is above the vapor sources. The bottom of the crushed rock layer should be above the exterior grade to act as a capillary break and not a reservoir, unless it is provided with an underdrain system. The slab design and underlayment should be in accordance with ASTM E1643 and E1745.

If the blotter sand layer is omitted (as may be required if slab design and construction is to be performed according to the 2016 Green Building Code), special wet curing procedures will be necessary. In all cases, development of appropriate slab mix design and curing procedures remains the purview of the project structural engineer.

Slab Moisture Protection: Due to the potential for landscape to be present directly adjacent to the slab edge/foundation or for drainage to be altered following our involvement with the project, varying levels of moisture below, at, or above the pad subgrade level should be anticipated. The slab designer should include the potential for moisture vapor transmission when designing the slab. Our experience has shown that vapor transmission through concrete is controlled through slab thickness as well as proper concrete mix design.

It should be noted that placement of the recommended plastic membrane, proper mix design, and proper slab underlayment and detailing per ASTM E1643 and E1745 will not provide a waterproof

condition. If a waterproof condition is desired, we recommend that a waterproofing expert be consulted for slab design.

Slab Thickness and Reinforcement: Geotechnical reports have historically provided minimums for slab thickness and reinforcement for general crack control. The concrete mix design and construction practices can additionally have a large impact on concrete crack control. All concrete should be anticipated to crack. As such, these minimums should not be considered to be stand-alone items to address crack control, but are suggested to be considered in the slab design methodology.

In order to help control the growth of cracks in interior concrete from becoming significant, we suggest the following minimums. Interior concrete slabs-on-grade not subject to heavy loads should be a minimum of 4 inches thick. A 4 inch thick slab should be reinforced. A minimum of No. 3 deformed reinforcing bars placed at 24 inches on center both ways for single-family residences and 18 inches on center both ways for multi-family structures, at the center of the structural section is suggested. Joint spacing should be provided by the structural engineer. Troweled joints recovered with paste during finishing or "wet sawn" joints should be considered every 10 feet on center. Expansion joint felt should be provided to separate floating slabs from foundations and at least at every third joint. Cracks will tend to occur at recurrent corners, curved or triangular areas and at points of fixity. Trim bars can be utilized at right angle to the predicted crack extending 40 bar diameters past the predicted crack on each side.

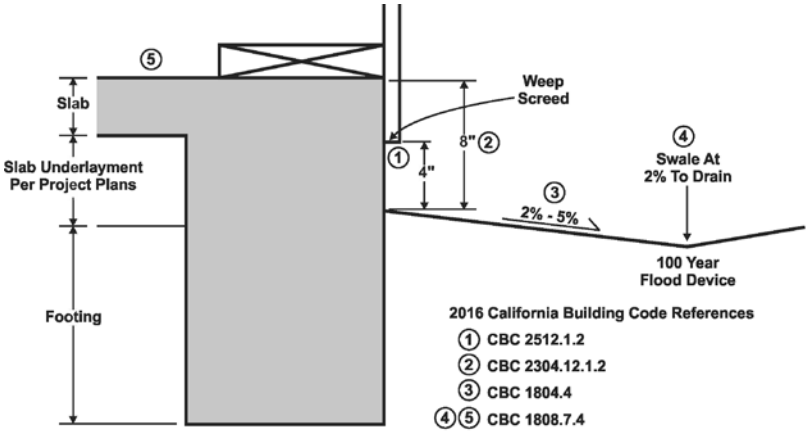
Vertical Deflections: Soil-supported slab-on-grade floors can deflect downward when vertical loads are applied, due to elastic compression of the subgrade. For design of concrete floors, a modulus of subgrade reaction of k = 150 psi per inch would be applicable for native soils and engineered fills.

Exterior Flatwork: Exterior concrete flatwork is recommended to have a 4 inch rock cushion. This could consist of vibroplate compacted crushed rock or compacted ¾ inch aggregate baserock.

If exterior flatwork concrete is against the floor slab edge without a moisture separator it may transfer moisture to the floor slab. Expansion joint felt should be provided to separate exterior flatwork from foundations and at least at every third joint. Contraction / groove joints should be provided to a depth of at least 1/4 of the slab thickness and at a spacing of less than 30 times the slab thickness for unreinforced flatwork, dividing the slab into nearly square sections. Cracks will tend to occur at recurrent corners, curved or triangular areas and at points of fixity. Trim bars can be utilized at right angle to the predicted crack extending 40 bar diameters past the predicted crack on each side.

Drainage Adjacent to Slabs: All grades should provide rapid removal of surface water runoff; ponding water should not be allowed on building pads or adjacent to foundations or other structural improvements (during and following construction). All soils placed against foundations during finish grading should be compacted to minimize water infiltration. Finish and landscape grading should include positive drainage away from all foundations. Section 1808.7.4 of the 2016 California Building Code (CBC) states that for graded soil sites, the top of any exterior foundation shall extend above the elevation of the street gutter at the point of discharge or the inlet of an approved drainage device a minimum of 12 inches plus 2 percent. If overland flow is not achieved adjacent to buildings, the drainage device should be designed to accept flows from a 100 year event. Grades directly adjacent to foundations should be no closer than 8 inches from the top of the slab (CBC 2304.12.1.2), and weep screeds are to be placed a minimum of 4 inches clear of soil grades and 2 inches clear of concrete or other hard surfacing (CBC 2512.1.2). From this

point, surface grades should slope a minimum of 2 percent away from all foundations for at least 5 feet but preferably 10 feet, and then 2 percent along a drainage swale to the outlet (CBC 1804.4). Downspouts should be tight piped via an area drain network and discharged to an appropriate non-erosive outlet away from all foundations.



Typical 2016 California Building Code Drainage Requirements

The above referenced elements pertaining to drainage of the proposed structures is provided as general acknowledgement of the California Building Code requirements, restated and graphically illustrated for ease of understanding. Surface drainage design is the purview of the Project Architect/Civil Engineer. Review of drainage design and implementation adjacent to the building envelopes is recommended as performance of these improvements is crucial to the performance of the foundation and construction of rigid improvements.

It should be noted that due to the Americans with Disabilities Act (ADA) requirements, design and construction of alternative site drainage configurations may be necessary, particularly for multi-family developments. In this case, design and construction of adequate drainage adjacent to foundations and slabs are essential to preserving foundation support and reducing the potential for wet slab related issues. A typical example of this condition occurs in commercial developments where the landscape grades are situated at the same elevation as the parking areas so as to not create a drop off between the grades. This condition subsequently results in flat grades between the building, landscape area, and parking lot which do not meet building code requirements.

Asphalt Concrete Pavement Design

We understand that asphalt pavements will be used for the associated roadways. The following comments and recommendations are given for pavement design and construction purposes. All pavement construction and materials used should conform to applicable sections of the latest edition of the California Department of Transportation Standard Specifications.

Subgrade Compaction: After installation of any underground facilities, the upper 8 inches of subgrade soils under pavements sections should be compacted to a minimum relative compaction of 95 percent based on the ASTM D1557 test method at a moisture content near or above optimum. Aggregate bases should also be compacted to a minimum relative compaction of 95 percent based on the aforementioned test method.

Subgrade Stability: All subgrades and aggregate base should be proof-rolled with a full water truck or equivalent immediately before paving, in order to evaluate their condition. If unstable subgrade conditions are observed, these areas should be overexcavated down to firm materials and the resulting excavation backfilled with suitable materials for compaction (i.e. drier native soils or aggregate base). Areas displaying significant instability may require geotextile stabilization fabric within the overexcavated area, followed by placement of aggregate base. Final determination of any required overexcavation depth and stabilization fabric should be based on the conditions observed during subgrade preparation.

Design Criteria: Critical features that govern the durability of a pavement section include the stability of the subgrade; the presence or absence of moisture, free water, and organics; the fines content of the subgrade soils; the traffic volume; and the frequency of use by heavy vehicles. Soil conditions can be defined by a soil resistance value, or "R-Value," and traffic conditions can be defined by a Traffic Index (TI).

Design Values: The following table provides recommended pavement sections based on the R-Value test (CTM 301) performed on a bulk sample representative of the materials expected to be exposed at subgrade, as well as our experience with similar materials in the area. R-values of 72 and 49 were determined for the silty SANDS tested in the Reference No. 1 report; however, due to the variability of onsite soils and the potential redistribution of material typically encountered during grading, we used an R-Value of 40 in our design.

Design values provided are based upon properly drained subgrade conditions. Although the R-Value design to some degree accounts for wet soil conditions, proper surface and landscape drainage design is integral in performance of adjacent street sections with respect to stability and degradation of the asphalt. If clay soils are encountered and cannot be sufficiently blended with non-expansive soils, we should review pavement subgrades to determine the appropriateness of the provided sections, and provide additional pavement design recommendations as field conditions dictate. Even minor clay constituents will greatly reduce the design R-Value.

The recommended design thicknesses presented in the following table were calculated in accordance with the methods presented in the Sixth Edition of the California Department of Transportation Highway Design Manual. A varying range of traffic indices are provided for use by the project Civil Engineer for roadway design.

Table 6: Asphalt Pavement Section Recommendations

Design Traffic Indices	Alternative Pavement Sections (Inches)	
	Asphalt Concrete *	Aggregate Base **
4.5	2.5 3.0	4.0 5.0
5.0	2.5 3.0	5.0 4.0
5.5	3.0 3.5	5.0 4.0
6.0	3.0 3.5	6.5 5.5
6.5	3.5 4.0	7.0 6.0
7.0	4.0 4.5	7.0 6.0

* Asphalt Concrete: must meet specifications for Caltrans Hot Mix Asphalt Concrete
** Aggregate Base: must meet specifications for Caltrans Class II Aggregate Base (R-Value = minimum 78)

Due to the redistribution of materials that occurs during mass grading operations, we should review pavement subgrades to determine the appropriateness of the provided sections.

Portland Cement Concrete Pavement Design

We understand that Portland cement concrete pavements may be considered for various aspects of exterior paving for the site. The American Concrete Institute (ACI) Concrete Pavement Design method (ACI 330R-08) was used for design of the exterior concrete (rigid) pavements at the site. The pavement thicknesses were evaluated based on the soil design parameters provided in the following table.

Table 7: Soil Parameters

Subgrade Soil Description	k, Modulus of Subgrade Reaction*	Base Course
Silty SAND	195 pci	6 inches

* Based on an R-Value of 40 as recommended above and correlated to a k-Value recommended by ACI 330R.

Based on the subgrade soil parameters shown in the above table, the recommended concrete thicknesses for various traffic descriptions are presented in the table below. The recommended thicknesses provided below assume the use of plain (non-reinforced) concrete pavements.

We recommend that the rigid pavement be placed on at least 6 inches of aggregate base compacted to at least 95 percent of the maximum dry density per the ASTM D 1557 test method. From a geotechnical perspective, contraction joints should be placed in accordance with the American Concrete Institute (ACI) recommendations which include providing a joint spacing about 30 times the slab thickness up to a maximum of 10 feet. The joint patterns should also divide the slab into nearly square panels. If increased joint spacing is desired, reinforcing steel should be installed within the pavement in accordance with ACI recommendations. Final determination of steel reinforcement configurations (if used within the pavements) remains the purview of the Project Structural Engineer.

Table 8: Concrete Pavement Section Recommendations

Category	ADTT*	Pavement Traffic Description	Thickness (inches)	
			3000 psi**	4000 psi**
A	1	Car parking areas and access lanes	5.0	4.5
A	10	Autos, pickups, and panel trucks only	5.5	5.0
B	25	Shopping center entrance and service lanes	6.0	5.5
B	300	Bus parking areas and interior lanes Single-unit truck parking areas and interior lanes	7.0	6.0
C	100	Roadway Entrances and Exterior Lanes	7.0	6.5
C	300		7.5	6.5
C	700		7.5	7.0

* Average Daily Truck Traffic
** 28-day concrete compressive strength

Drainage

In order to maintain the engineering strength characteristics of the soil presented for use in this Geotechnical Engineering Study Update, maintenance of the building pads will need to be performed. This maintenance generally includes, but is not limited to, proper drainage and control of surface and subsurface water which could affect structural support and fill integrity. A difficulty exists in determining which areas are prone to the negative impacts resulting from high moisture conditions due to the diverse nature of potential sources of water; some of which are outlined in the paragraph below. We suggest that measures be installed to minimize exposure to the adverse effects of moisture, but this will not guarantee that excessive moisture conditions will not affect the structure.

Some of the diverse sources of moisture could include water from landscape irrigation, annual rainfall, offsite construction activities, runoff from impermeable surfaces, collected and channeled water, and water perched in the subsurface soils on the bedrock horizon or present in fractures in the weathered bedrock. Some of these sources can be controlled through drainage features installed either by the owner or contractor. Others may not become evident until they, or the effects of the presence of excessive moisture, are visually observed on the property.

Some measures that can be employed to minimize the buildup of moisture include, but are not limited to proper backfill materials and compaction of utility trenches within the footprint of the proposed residential and multi-family structures; grout plugs at foundation penetrations; collection and channeling of drained water from impermeable surfaces (i.e. roofs, concrete or asphalt paved areas); installation of subdrain/cut-off drain provisions; utilization of low flow irrigation systems; education to the proposed homeowners of proper design and maintenance of landscaping and drainage facilities that they or their landscaper installs.

Crawlspace: This configuration has an elevated risk of moisture intrusion and collection. Provisions for surface drainage should be provided at the base of the crawlspace and if sufficient fall to the sides of the residence cannot be achieved, the basement wall drainage recommendations in this report should be implemented. The construction of a building pad subdrain up slope of the crawlspace could reduce the risk of moisture penetration; however, moisture could still be found on the crawlspace surface without efforts to provide a complete cutoff. Ventilation for the crawlspace should meet minimum code requirements as well as be uniformly spaced around the perimeter of the structure to the extent possible.

Building Pad Subdrain: It has been our experience that sites constructed within this area generally have an increased potential for moisture related issues related to water perched on the bedrock

horizon and/or present in the fractures of the bedrock as well as moisture transmission through utility trenches. To mitigate for the potential of these issues, subdrains can be constructed in addition to the drainage provisions provided in the 2016 CBC. Typical subdrain construction would include a 3 feet deep trench (or depth required to intercept the bottom of utility trenches) constructed as detailed on Figure C-6. The water collected in the subdrain pipe would be directed to an appropriate non-erosive outlet. We recommend that a representative from our firm be present during the subdrain installation procedures to document that the drain is installed in accordance with the observed field conditions, as well as to provide additional consultation as the conditions dictate.

As noted in the previous discussions, the moisture conditions may not manifest until after the site is developed. As such, any recommendations for the subdrain orientation and location to mitigate the moisture conditions can be provided on an as requested basis as the conditions arise. It should also be noted that similar moisture conditions may arise within crawlspace grades (particularly when located below other potential moisture sources), and may warrant similar mitigation measures. We recommend that the developer notify future owners of this potential.

Median and Roadway Landscaping Drainage: In developments built on relatively poor draining soils (i.e. shallow bedrock), prolonged water seepage into pavement sections can result in softening of subgrade soils and subsequent pavement distress. In addition, where shallow bedrock conditions are present, water can become perched on the relatively impermeable soil horizon and eventually inundate utility trench backfill. The variable support condition between native soils and compacted trench backfill materials, coupled with prolonged water exposure can lead to subsidence of trench backfill materials if bridging of trench backfill occurs during placement or natural jetting of soils into voids around pipes occurs. Joint utility trenches are generally more susceptible to the jetting issues due to the quantity of pipe placed in the trench.

It is anticipated that heavy landscape watering could enter and pond within the street aggregate base section as it permeates through the aggregate base under the sidewalks and/or curbs. Prolonged seepage within the pavement section could cause distress to pavements in heavy traffic areas. Some measures that can be employed to minimize the saturation of the subgrade and aggregate base materials include, but are not limited to, construction of cut-off drains or moisture barriers alongside the roadway adjacent to the roadway interface, construct of subdrains within landscape medians and installation of plug and drain systems within utility trenches. Due to the elusive and discontinuous nature of drainage related issues, a risk based approach should be determined by the developer based on consultation and discussions with the design professionals and the amount of protection of facilities that the developer may want to provide against potential moisture related issues.

Post Construction: All drainage related issues may not become known until after construction and landscaping are complete. Therefore, some mitigation measures may be necessary following site development. Landscape watering is typically the largest source of water infiltration into the subgrade. Given the soil conditions on site, excessive or even normal landscape watering may contribute to groundwater levels rising, which could contribute to moisture related problems and/or cause distress to foundations and slabs, pavements, and underground utilities, as well as creating a nuisance where seepage occurs. On foothill developments constructed with cut/fill pads on shallow bedrock conditions, seepage may not be apparent until post construction. In order to mitigate these conditions additional subdrainage measures may be necessary.

6.0 DESIGN REVIEW AND CONSTRUCTION MONITORING

The design plans and specifications should be reviewed and accepted by Youngdahl Consulting Group, Inc. prior to contract bidding. A review should be performed to determine whether the recommendations contained within this report are still applicable and/or are properly reflected and incorporated into the project plans and specifications.

Construction Monitoring

Construction monitoring is a continuation of the findings and recommendations provided in this report. It is essential that our representative be involved with all grading activities in order for us to provide supplemental recommendations as field conditions dictate. Youngdahl Consulting Group, Inc. should be notified at least two working days before site clearing or grading operations commence, and should observe the stripping of deleterious material, overexcavation of existing fills or loose/soft soils and provide consultation to the Grading Contractor in the field.

Low Impact Development Standards

Low Impact Development or LID standards have become a consideration for many projects in the region. LID standards are intended to address and mitigate urban storm water quality concerns. These methods include the use of Source Controls, Run-off Reduction and Treatment Controls. For the purpose of this report use of Run-off Reduction measures and some Treatment Controls may impact geotechnical recommendations for the project.

Youngdahl Consulting Group, Inc. did not perform any percolation or infiltration testing for the site as part of the Geotechnical Investigation. A review of soil survey and the data collected from test pits indicate that soils within the project are Hydrologic Soil Group C (slow permeability). Based on this condition, use of infiltration type LID methods (infiltration trenches, dry wells, infiltration basins, permeable pavements, etc.) should not be considered without addressing applicable geotechnical considerations/implications. As such, use of any LID measure that would require infiltration of discharge water to surfaces adjacent to structures/pavement or include infiltration type measures should be reviewed by Youngdahl Consulting Group, Inc. during the design process.

Post Construction Monitoring

As described in Post Construction section of this report, all drainage related issues may not become known until after construction and landscaping are complete. Youngdahl Consulting Group, Inc. can provide consultation services upon request that relate to proper design and installation of drainage features during and following site development. In addition, if the development includes use of LID measures maintenance of those features in conformance with the standard of practice and documentation from the designer will be necessary. The impact from infiltration or run-off reduction measures to engineered structures and foundations may not become apparent until after construction. We recommend that all LID measures be inspected and maintained as documented by the designer and if adverse impacts are noted related to the structure or site that Youngdahl Consulting Group, Inc. be retained to review the LID measure and provide additional consulting and options.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. This report has been prepared for the exclusive use of Stonehenge Springs, LLC and their consultants for specific application to the Stonehenge Springs project. Youngdahl Consulting Group, Inc. has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Youngdahl Consulting Group, Inc. makes no other warranty, expressed or implied.

2. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they be due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may cause this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three years without our review nor should it be used or is it applicable for any properties other than those studied.

3. Section [A] 107.3.4 of the 2016 California Building Code states that, in regard to the design professional in responsible charge, the building official shall be notified in writing by the owner if the registered design professional in responsible charge is changed or is unable to continue to perform the duties.

   WARNING: Do not apply any of this report's conclusions or recommendations if the nature, design, or location of the facilities is changed. If changes are contemplated, Youngdahl Consulting Group, Inc. must review them to assess their impact on this report's applicability. Also note that Youngdahl Consulting Group, Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of this report's subsurface data or engineering analyses without the express written authorization of Youngdahl Consulting Group, Inc.

4. The analyses and recommendations contained in this report are based on limited windows into the subsurface conditions and data obtained from subsurface exploration. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any variations or undesirable conditions be encountered during the development of the site, Youngdahl Consulting Group, Inc. will provide supplemental recommendations as dictated by the field conditions.

5. The recommendations included in this report have been based in part on assumptions about strata variations that may be tested only during earthwork. Accordingly, these recommendations should not be applied in the field unless Youngdahl Consulting Group, Inc. is retained to perform construction observation and thereby provide a complete professional geotechnical engineering service through the observational method. Youngdahl Consulting Group, Inc. cannot assume responsibility or liability for the adequacy of its recommendations when they are used in the field without Youngdahl Consulting Group, Inc. being retained to observe construction. Unforeseen subsurface conditions containing soft native soils, loose or previously placed non-engineered fills should be a consideration while preparing for the grading of the property. It should be noted that it is the responsibility of the owner or his/her representative to notify Youngdahl Consulting Group, Inc., in writing, a minimum of 48 hours before any excavations commence at the site.

6. Our experience has shown that vapor transmission through concrete is controlled through proper concrete mix design. As such, proper control of moisture vapor transmission should be considered in the design of the slab as provided by the project architect, structural or civil engineer. It should be noted that placement of the recommended plastic membrane, proper mix design, and proper slab underlayment and detailing per ASTM E1643 and E1745 will not provide a waterproof condition. If a waterproof condition is desired, we recommend that a waterproofing expert be consulted for slab design.

7. Following site development, additional water sources (i.e. landscape watering, downspouts) are generally present. The presence of low permeability materials can prohibit rapid dispersion of surface and subsurface water drainage. Utility trenches typically provide a conduit for water distribution. Provisions may be necessary to mitigate adverse effects of perched water conditions. Mitigation measures may include the construction of cut-off systems and/or plug and drain systems. Close coordination between the design professionals regarding drainage and subdrainage conditions may be warranted.

   Seepage may be observed emanating from the cut slopes following their excavation during the following rainy season or following development of the areas above the cut. Generally this seepage is not enough flow to be a stability issue to the cut slope, but may be an issue for the owner of the lot at the base of the cut from a surface drainage and standing water (damp spot) standpoint. This amount of water is generally collected easily with landscaping drainage, surface drainage at the toe of the slope, or subsurface toe drains. Recommendations may be provided at the time of observed seepage; however, we recommend that the developer of the property disclose this possibility to future owners.

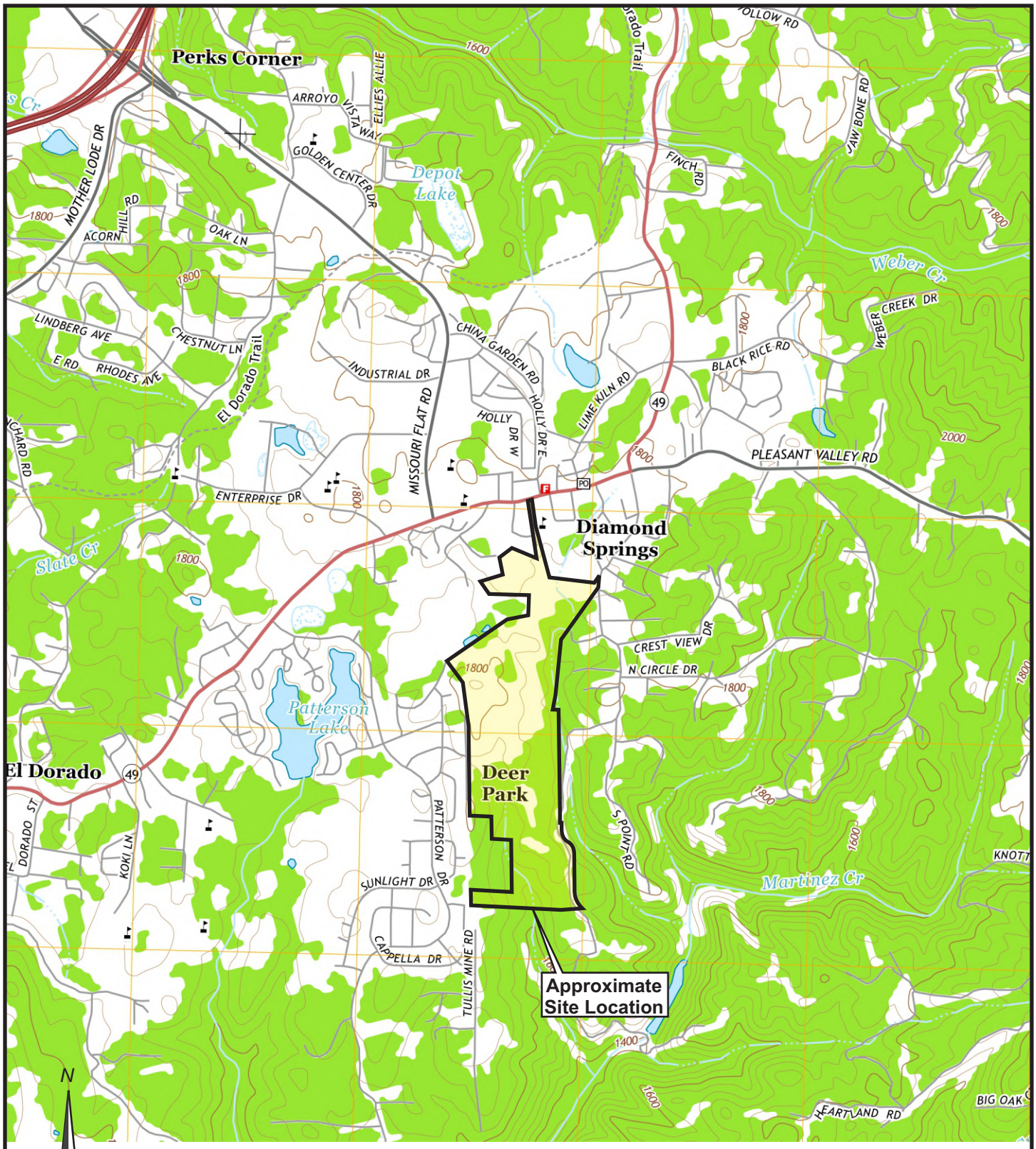
Table 9: Checklist of Recommended Services

Item Description		Recommended	Not Anticipated
1	Provide foundation design parameters	Included	
2	Review grading plans and specifications	✓	
3	Review foundation plans and specifications	✓	
4	Observe and provide recommendations regarding demolition		✓
5	Observe and provide recommendations regarding site stripping	✓	
6	Observe and provide recommendations on moisture conditioning removal, and/or recompaction of unsuitable existing soils	✓	
7	Observe and provide recommendations on the installation of subdrain facilities	✓	
8	Observe and provide testing services on fill areas and/or imported fill materials	✓	
9	Review as-graded plans and provide additional foundation recommendations, if necessary	✓	
10	Observe and provide compaction tests on storm drains, water lines and utility trenches	✓	
11	Observe foundation excavations and provide supplemental recommendations, if necessary, prior to placing concrete	✓	
12	Observe and provide moisture conditioning recommendations for foundation areas and slab-on-grade areas prior to placing concrete		✓
13	Provide design parameters for retaining walls	Included	
14	Provide finish grading and drainage recommendations	Included	
15	Provide geologic observations and recommendations for keyway excavations and cut slopes during grading	✓	
16	Excavate and recompact previous test pits within structural areas	✓	

APPENDIX A

Field Study

Vicinity Map
Site Plan



Scale: 1:24,000

BASE MAP REFERENCE: *U.S.G.S. 7.5 Minute Topographic Series, Placerville Quadrangle, Dated 2015*

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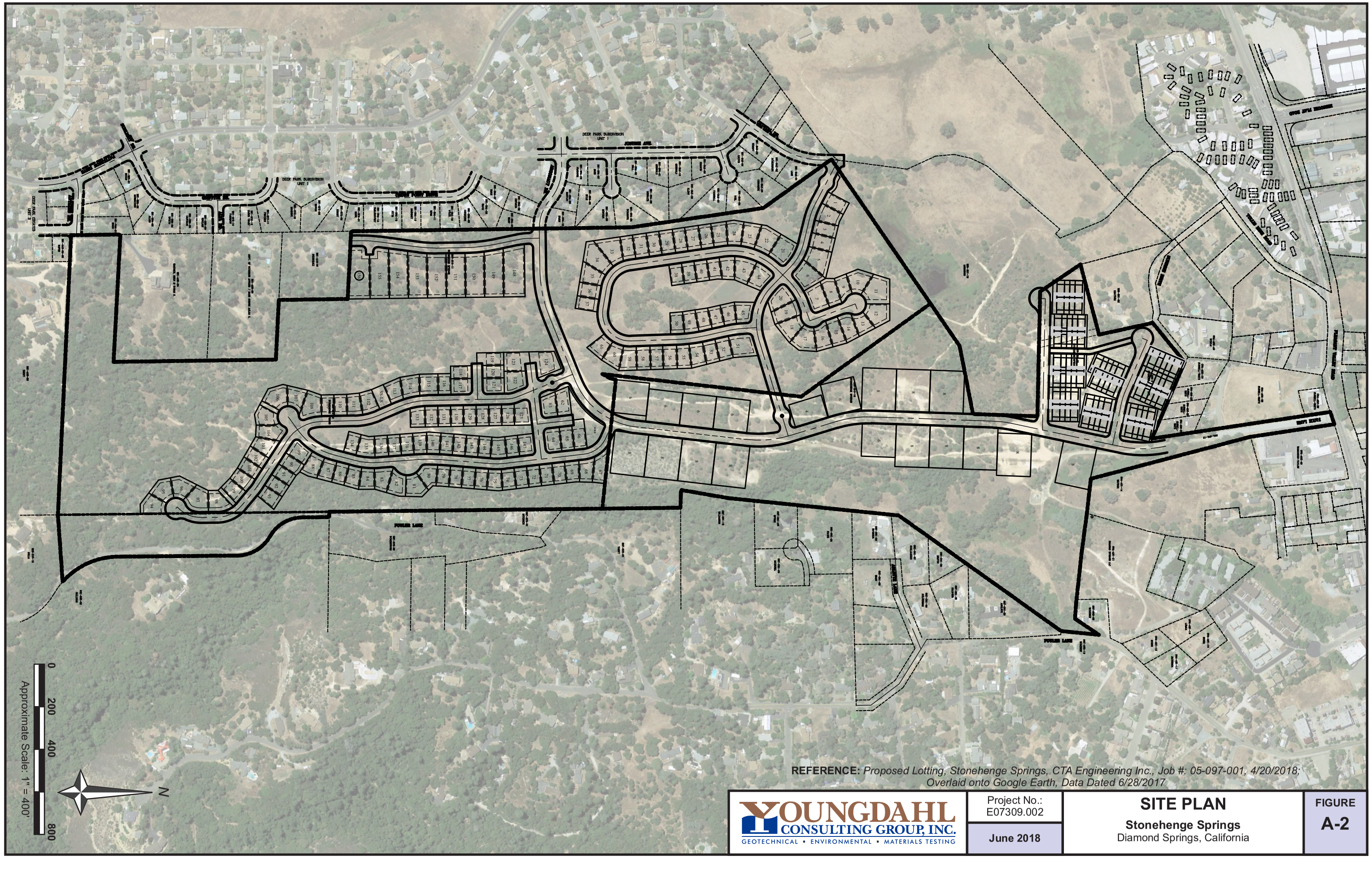
Project No.: E07309.002

June 2018

VICINITY MAP

Stonehenge Springs
Diamond Springs, California

FIGURE
A-1



REFERENCE: *Proposed Lotting, Stonehenge Springs, CTA Engineering Inc., Job #: 05-097-001, 4/20/2018; Overlaid onto Google Earth, Data Dated 6/28/2017*

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Project No.: E07309.002

June 2018

SITE PLAN

Stonehenge Springs
Diamond Springs, California

FIGURE
A-2

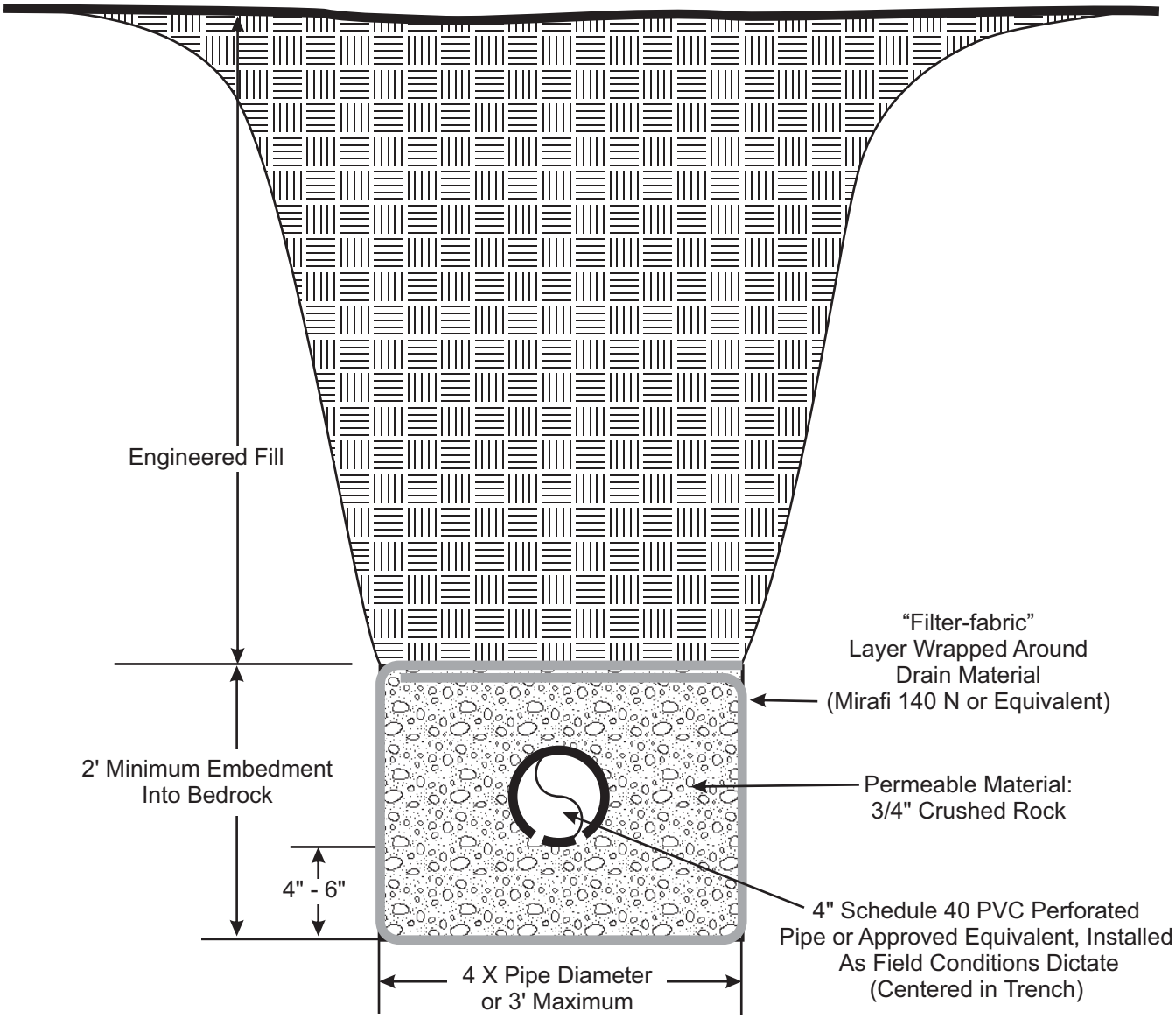
APPENDIX B

Details

Canyon Style Drain
Keyway and Bench with Drain
Plug and Drain
Site Wall Drainage
Basement Wall Drainage
Subdrain

Print to PDF to Flatten Form Fields

Canyon Drain Installation
(Typical)



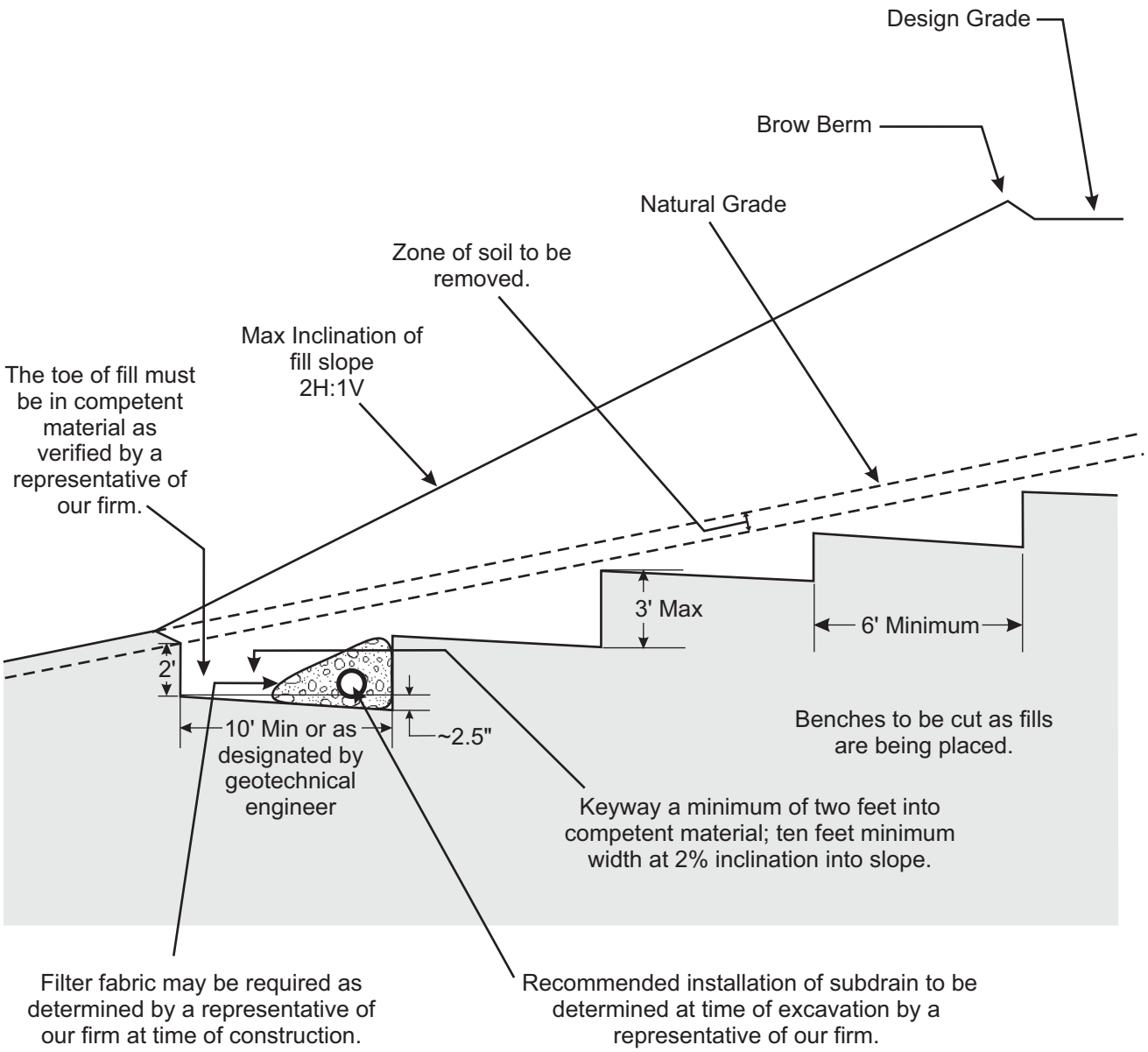
YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**CANYON STYLE DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-1**

PLACEMENT OF FILL ON NATURAL SLOPE

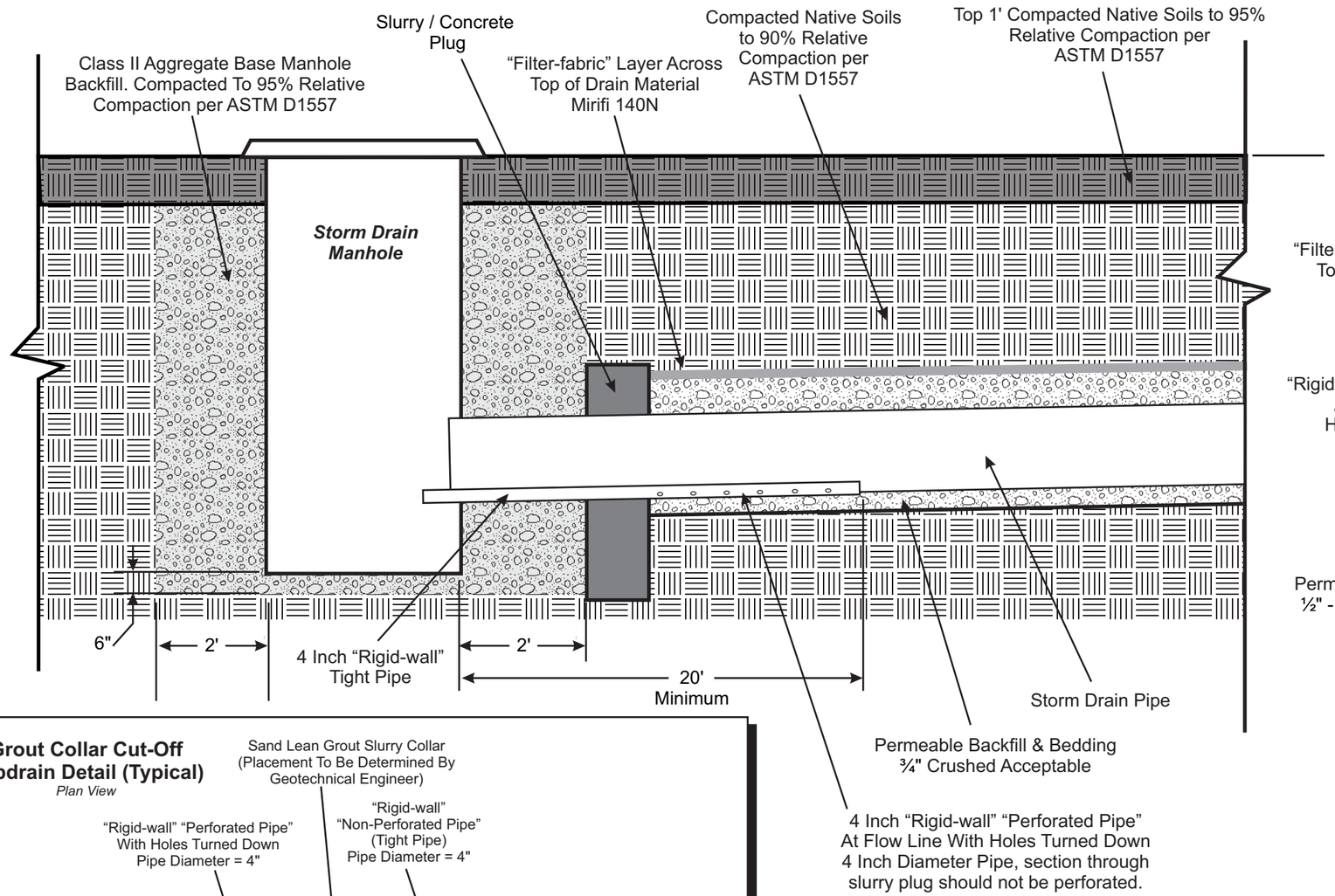
(Typical)

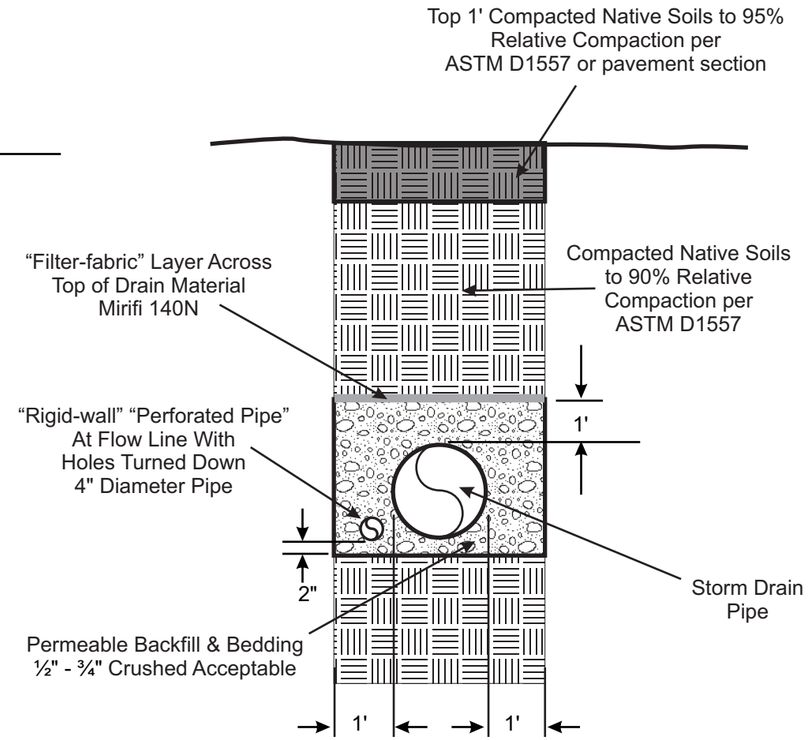
All keyways should be observed and approved prior to placement of fill.

A keyway is required by CBC for fills on natural slopes of 5H:1V or steeper.



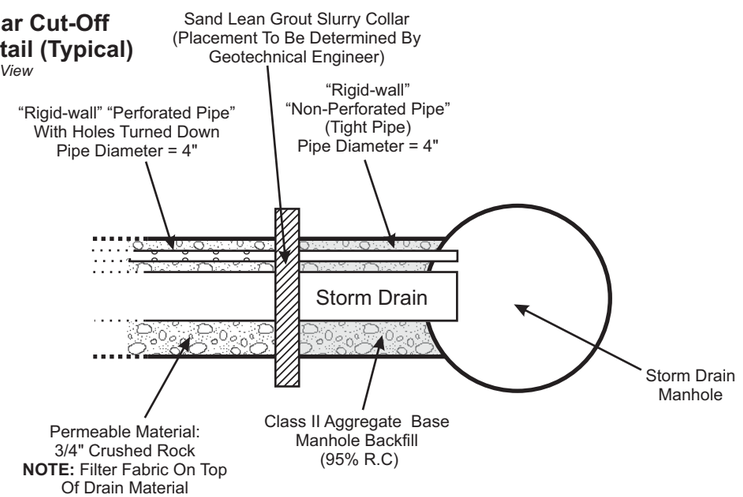
YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002	**KEYWAY & BENCH WITH DRAIN**	**FIGURE**
	June 2018	**Stonehenge Springs** Diamond Springs, California	**B-2**





Grout Collar Cut-Off Subdrain Detail (Typical)

Plan View



Notes: *1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.*
2. Washed clean permeable material.
3. Slurry collar to extend into trench sidewalls and to top of pipe envelope.

Notes: *Slope trench and "rigid-wall" pipes at least 1% gradient to drain.*

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Project No.: E07309.002

June 2018

TYPICAL STORM DRAIN / SUB-DRAIN DETAIL

Stonehenge Springs

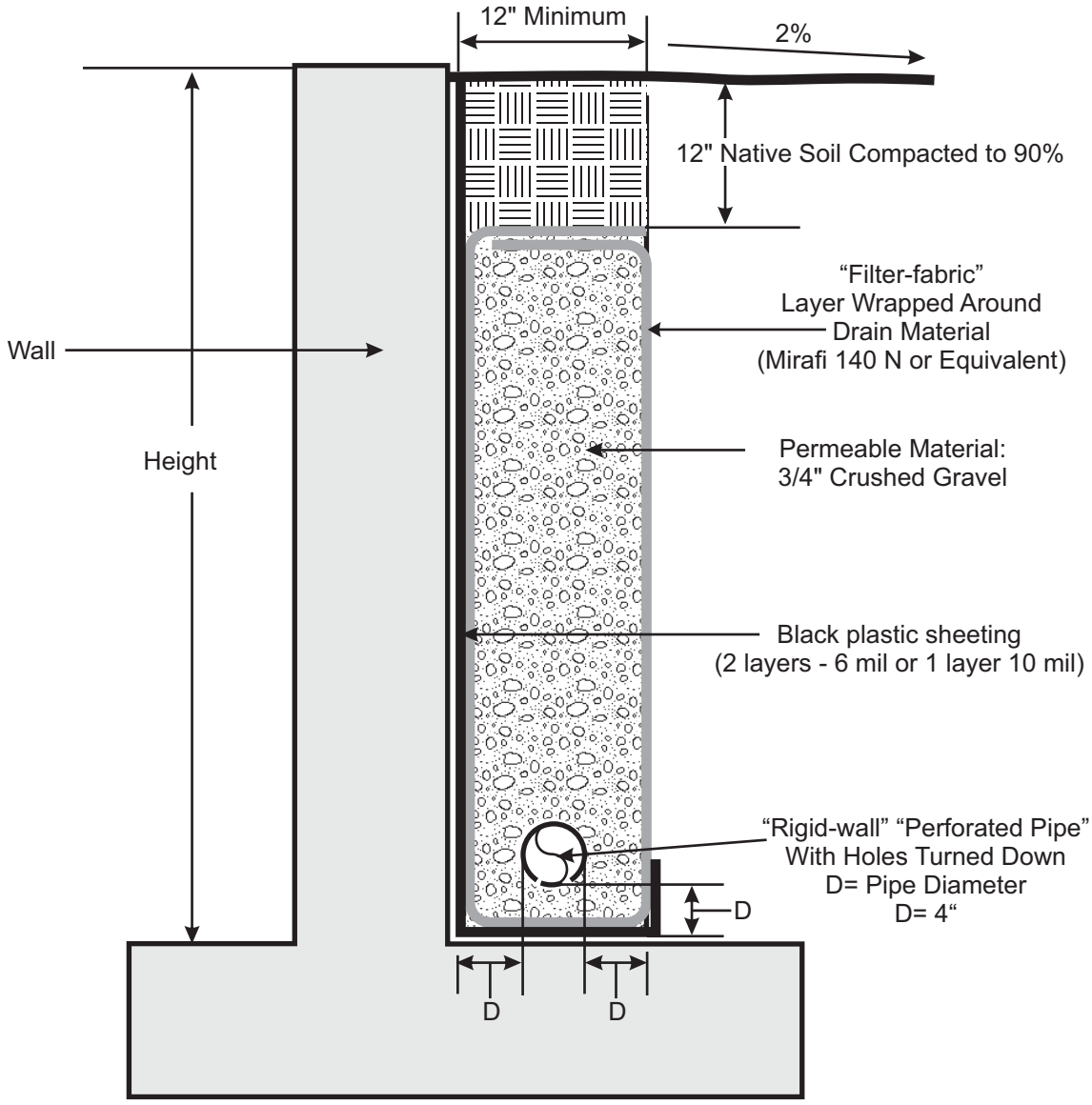
Diamond Springs, California

FIGURE

B-3

Retaining Wall With "Perforated Pipe Sub-Drain"

(Typical Cross Section)

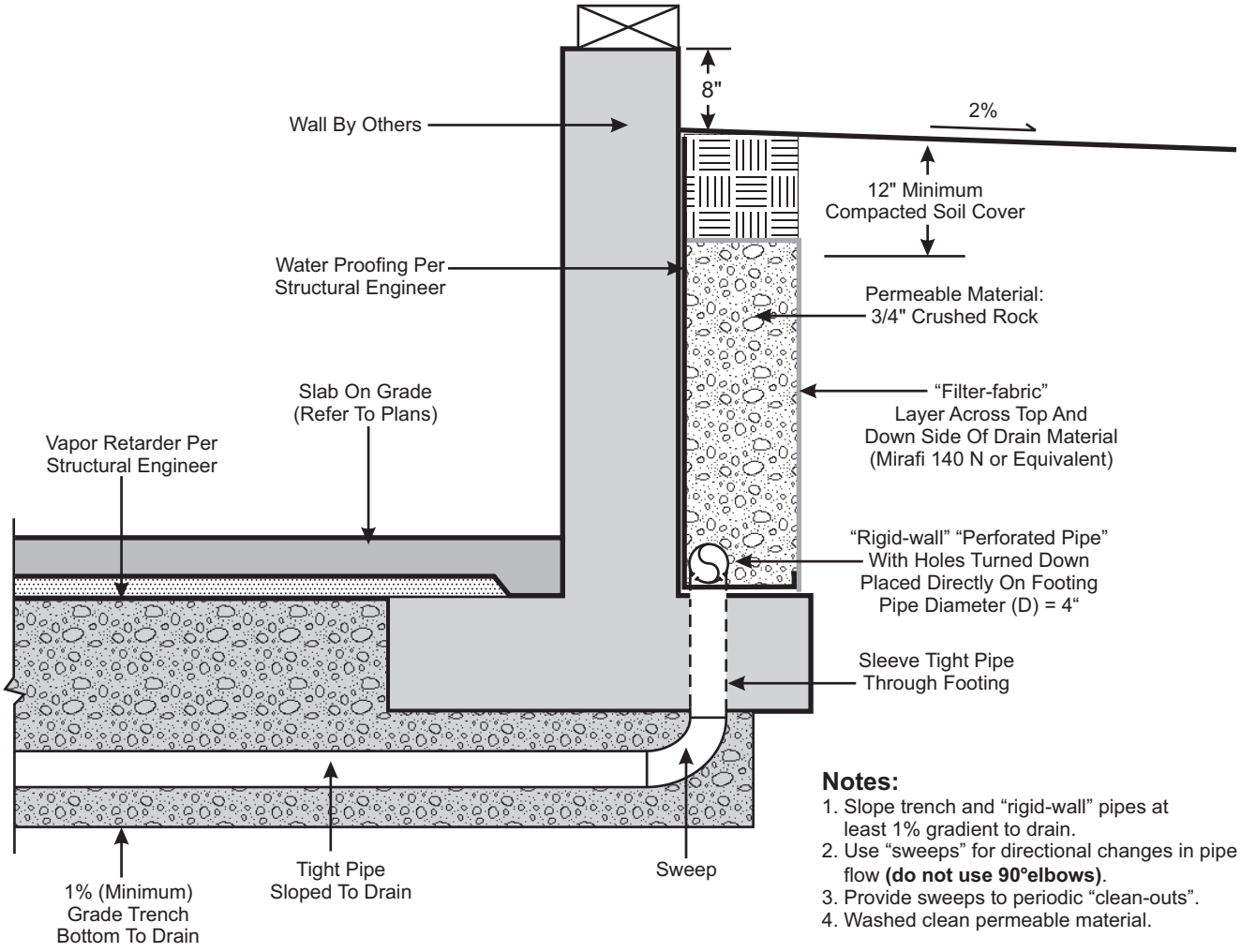


Notes:
1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain to an appropriate outfall area away from residence.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide periodic "clean-outs".
4. Washed clean permeable material.

Not To Scale

YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**RETAINING WALL DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-4**

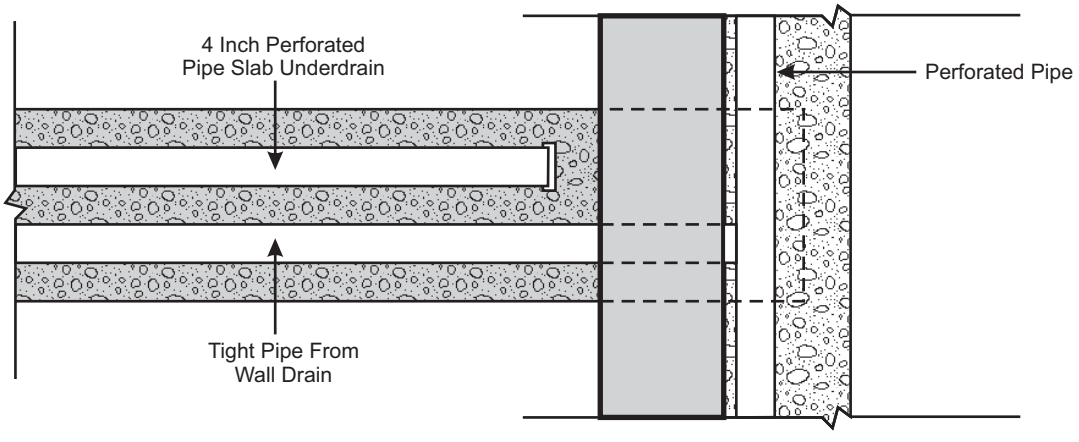
Profile View
(Typical)



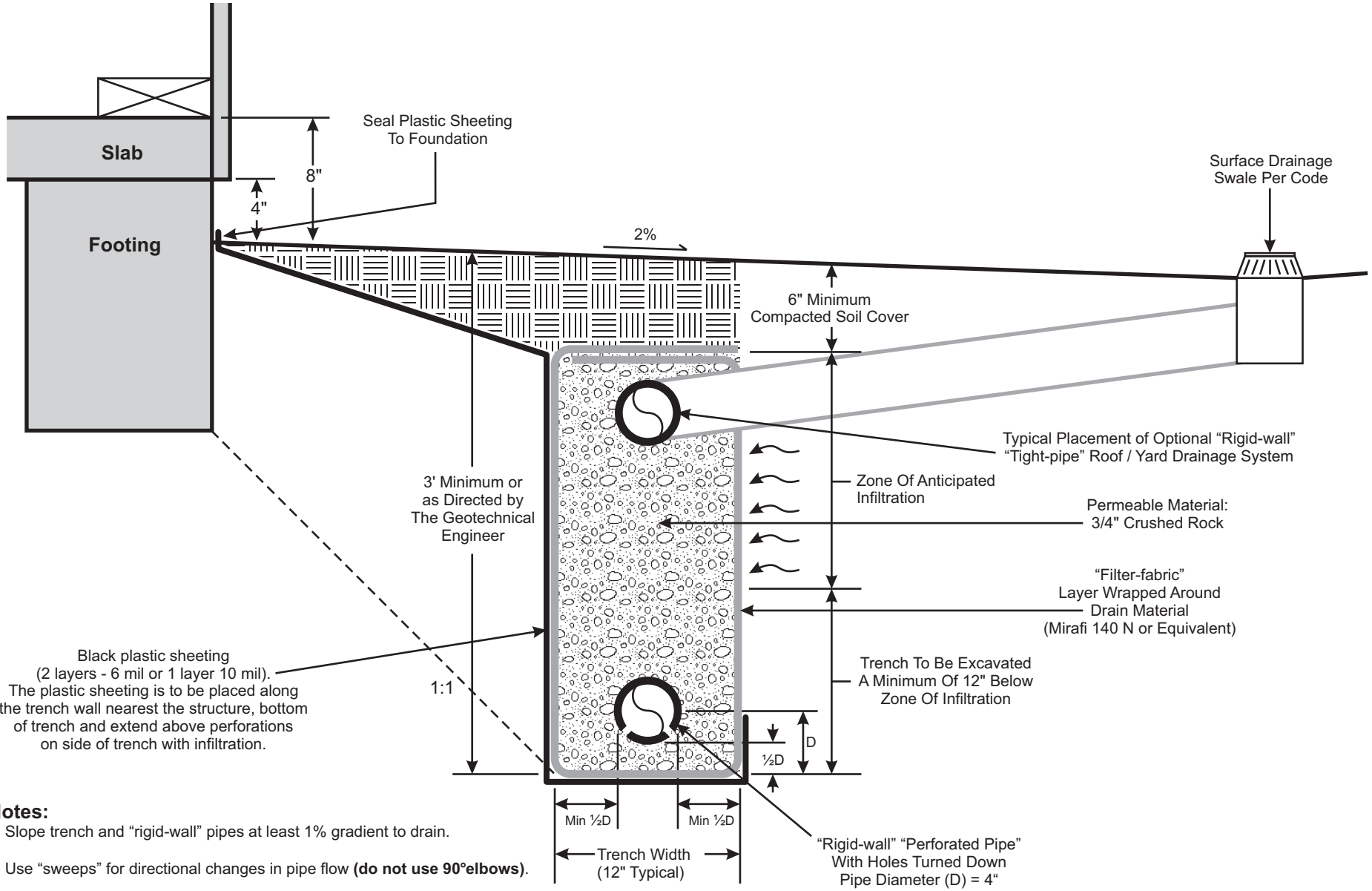
Notes:

1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide sweeps to periodic "clean-outs".
4. Washed clean permeable material.

Plan View
(Typical)



YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**BASEMENT STEMWALL DRAIN** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-5**



Notes:

1. Slope trench and "rigid-wall" pipes at least 1% gradient to drain.
2. Use "sweeps" for directional changes in pipe flow **(do not use 90°elbows)**.
3. Provide sweeps to periodic "clean-outs".
4. Washed clean permeable material.

YOUNGDAHL CONSULTING GROUP, INC. GEOTECHNICAL ▪ ENVIRONMENTAL ▪ MATERIALS TESTING	Project No.: E07309.002 **June 2018**	**SUB-DRAIN DETAIL** **Stonehenge Springs** Diamond Springs, California	**FIGURE** **B-6**

Appendix H
Transportation



TECHNICAL MEMORANDUM - DRAFT

Date: April 19, 2021

To: Mike Foote – Stonehenge Springs, LLC

From: David B. Robinson – Fehr & Peers

Subject: Dorado Oaks VMT Analysis RS20-3992

This memorandum presents vehicle miles traveled (VMT) analysis of the proposed Dorado Oaks Tentative Subdivision Map Project in El Dorado County.

With the implementation of Senate Bill (SB) 743, local agencies such as El Dorado County may no longer rely on vehicular delay or capacity-based analyses for California Environmental Quality Act (CEQA) impact determination. Instead, agencies must analyze transportation impacts utilizing VMT, a measure of the total distance traveled by vehicles for trips beginning or ending in the County on a typical weekday. This memorandum covers the following topics:

- SB 743
- VMT Thresholds of Significance
- VMT Estimation Methodology
- Project Summary
- VMT for Dorado Oaks Tentative Subdivision Map Project

SB 743

Passed in 2013, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change is being made by replacing LOS with vehicle miles of travel (VMT). This shift in transportation impact focus is intended to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. Level of service or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review and impact fee programs.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of

Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. The provisions apply statewide as of July 1, 2020.

To help aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the *Technical Advisory on Evaluating Transportation Impacts in CEQA*[1] (December 2018) that provides guidance about the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per rate" basis.
- OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold. In other words, an office project that generates VMT per employee that is more than 85 percent of the regional VMT per employee could result in a significant impact. OPR notes that this threshold is supported by evidence that connects this level of reduction to the State's emissions goals.
- OPR recommends that where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.
- Lead agencies have the discretion to set or apply their own significance thresholds.

VMT Thresholds of Significance

In 2019, the El Dorado County Transportation Commission completed the *El Dorado County and City of Placerville SB 743 Implementation Plan*[2] (July 19, 2019) to support El Dorado County and the City of Placerville with implementation of SB 743, including the selection of VMT analysis methodology, setting thresholds of significance, and potential mitigation.

[1] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

[2] El Dorado County Transportation Commission. *El Dorado County and City of Placerville SB 743 Implementation Plan.* July 19, 2019. https://www.edcgov.us/Government/dot/Documents/Transportation%20Planning/EDCTC%20SB743%20Implementation%20Plan.pdf

With Resolution 141-2020[3] (October 6, 2020), the Board of Supervisors of the County of El Dorado adopted VMT thresholds of significance for purposes of analyzing transportation impacts under CEQA.

The County's VMT thresholds consider the VMT performance of residential and office components of a project separately, using the efficiency metrics of VMT per capita and VMT per employee, respectively. For retail components of a project, the county-wide VMT effect is analyzed. The El Dorado County VMT thresholds of significance are summarized below for each of these components:

- Residential – 15% below baseline unincorporated countywide VMT per Capita
- Commercial Office – 15% below baseline unincorporated countywide VMT per Employee
- Commercial Retail – No net increase in VMT

VMT Estimation Methodology

Consistent with Resolution 141-2020, VMT estimation was conducted using the El Dorado County Travel Demand Forecasting Model (EDCTDM). The VMT estimation process generates estimates in a manner that is consistent with OPRs Technical Advisory and the selected VMT significance thresholds outlined above.

The following section from the Technical Advisory suggests that lead agencies should use VMT estimation methodologies that account for the "full extent of vehicle travel".

> **Considerations for All Projects**. Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." (CEQA Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project's short-term and long-term effects on VMT.

To provide a full accounting of vehicle travel, the EDCTDM provides VMT estimates that include the VMT from intrazonal vehicle trips and trip length adjustments for the trips that enter or exit the area covered by the EDCTDM.

Intrazonal Trips and Trip Lengths

The VMT estimation process includes intrazonal trips in its estimates. Intrazonal trips are trips that have their origin and destination within the same traffic analysis zone (TAZ). Because these trips do not leave a TAZ, they are not assigned to the EDCTDM's roadway network. Consequently, intrazonal trips cannot be

[3] Board of Supervisors of the County of El Dorado Resolution 141-2020. https://www.edcgov.us/Government/dot/Documents/Transportation%20Planning/Executed%20Resolution%20141-2020.pdf

directly derived from the EDCTDM's network and must be estimated to provide a more complete VMT analysis. The intrazonal trip lengths are estimated by calculating half of the shortest travel distance between a given TAZ and all the other TAZs, using the EDCTDM's midday assignment. The EDCTDM uses the following four assignment periods to develop a 24-hour travel assignment:

- AM3VS.NET – AM 3-Hour Assignment
- MDVS.NET – Midday 5-Hour Assignment
- P3V.NET – PM 3-Hour Assignment
- EVV.NET – Evening 13-Hour Assignment

The different assignment periods are used to account for the affect that congestion has on accessibility (i.e., the ability to travel between two locations). It typically takes longer to travel the same distance during peak periods than it does during other times of the day. The midday 5-hour assignment period is used to calculate intrazonal travel because there is generally less traffic and less congestion (i.e., compared to the AM or PM peak periods) and is more representative of average daily conditions.

Gateway Trip Length Adjustments

The EDCTDM includes a buffer area that extends along Highway 50 from El Dorado County into eastern Sacramento County, including the City of Folsom and City of Rancho Cordova. **Figure 1** shows the model area, including the TAZs that represent El Dorado County (purple), the buffer area (yellow), and the state highway system. The buffer area allows for more detailed modeling of travel interaction between El Dorado County and eastern Sacramento County. However, even with the buffer area, adjustments to the length of trips passing through the EDCTDM's gateway locations are necessary to account for the full length of trips throughout California.

Table 1 summarizes the average trip lengths for trips entering (XI) and exiting (IX) the EDCTDM developed using the California Statewide Travel Demand Model (CSTDM). Although not as detailed a the EDCTDM, the CSTDM can summarize the general patterns of trips made by El Dorado County residents and employees entering and leaving the County throughout California. The CSTDM scale makes it a useful tool to generate trip length estimates for trips entering or leaving the EDCTDM coverage area.

Because of the sample size limitations with the California Household Travel Survey (CHTS) data (i.e., only 163 recorded trips), trip length adjustments from the CSTDM are used. The average additional travel distance from the CSTDM shown in **Table 1** indicate the additional lengths added to the trips that pass through the EDCTDM's gateway locations.

Table 1: Average Trip Length Adjustments for Each Gateway Location				
			Average Additional Travel Distance (miles)	
Gateway Location	Direction	Gateway Node ID	Internal to External (IX) Trips	External to Internal (XI) Trips
US 50	West	650	12.41	13.08
Dillard Road	South	651	4.11	3.96
Sloughhouse Road	South	652	0.00	0.00
Grant Line Rd/Sunrise Boulevard	South	653	31.33	20.39
Excelsior Road	South	654	11.07	10.38
Bradshaw Road	South	655	11.32	8.80
Mayhew Road	South	656	0.00	0.00
Jackson Road (SR 16)	West	657	6.91	6.40
Local Access between Bradshaw Road and Excelsior Road	South	658	0.00	0.00
Eagles Nest Road	South	659	0.00	0.00
Folsom Boulevard	West	660	7.73	7.19
Kiefer Boulevard	West	661	8.88	8.54
Sunrise Boulevard	North	662	5.47	6.14
Hazel Avenue	North	663	8.16	5.41
Folsom Auburn Road	North	664	10.17	12.66
Greenback Lane	West	665	5.43	5.17
Oak Avenue	West	666	6.97	7.44
SR 49	South	667	0.00	0.00
Jackson Road/Latrobe Road/SR 49/Omo Ranch Road	South	668	15.96	14.21
Jackson Road	South	669	0.00	0.00
Latrobe Road	South	670	0.00	0.00
SR 49	North	671	18.61	16.28
SR 88	East	672	0.00	0.00
N. South Rd	South	673	3.73	3.82
US 50	East	674	19.21	18.38

Notes:
Internal to External (IX) trips are trips that begin inside the El Dorado County model area and end outside.
External to Internal (XI) trips are trips that begin outside the El Dorado County model area and end inside.
Source: California Statewide Travel Demand Model

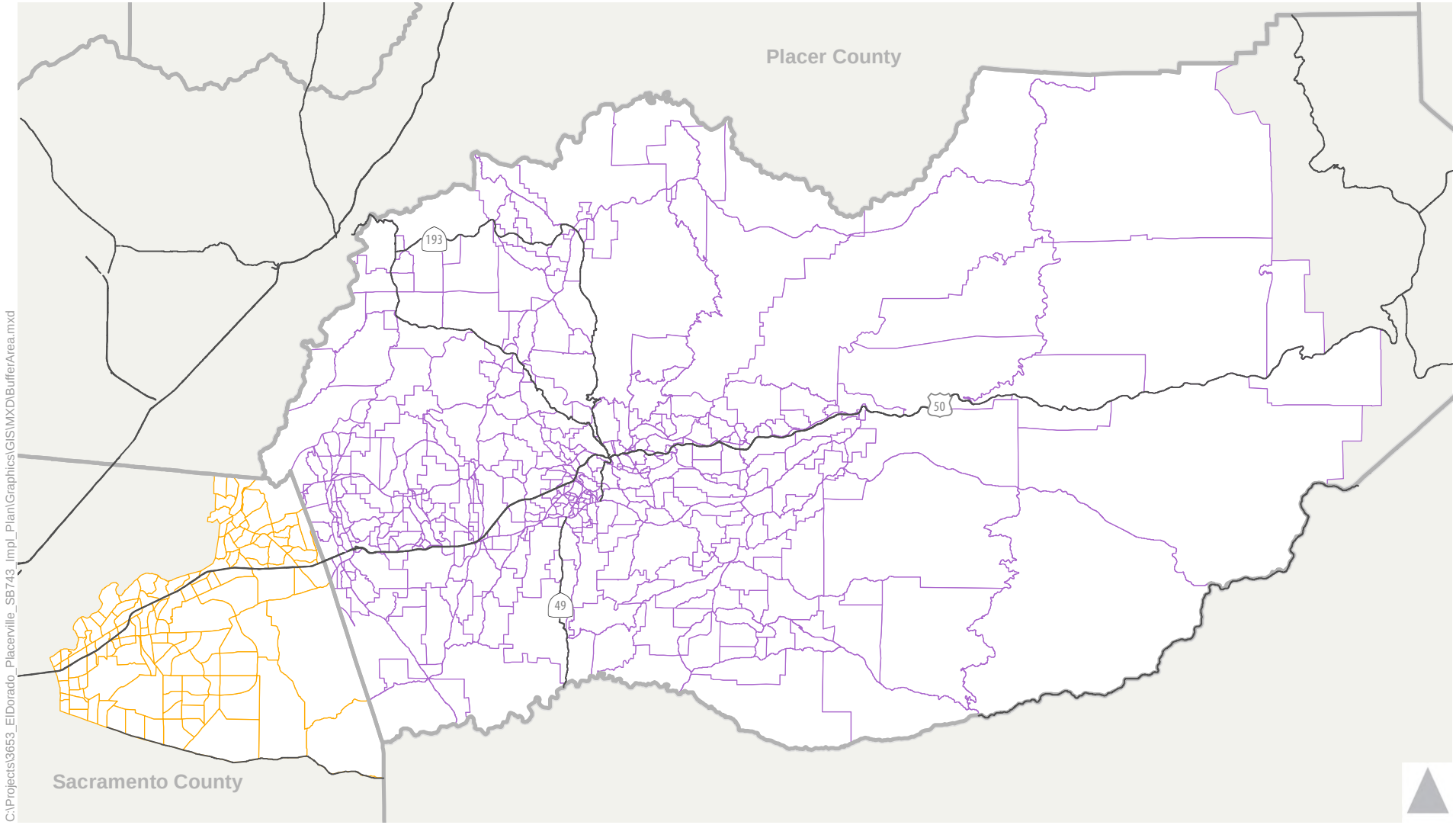


Figure 1
El Dorado County Model (2018)
Traffic Analysis Zones within El Dorado County and the Buffer Area

Network Refinements

The EDCTDM is a countywide model developed and maintained by the County for traffic analysis related to the General Plan and Traffic Impact Fee Program. Consistent with these applications, the model includes major transportation facilities, including County arterials like El Dorado Hills Boulevard and State facilities like US 50, and a TAZ system that is at a corresponding level of detail. The EDCTDM does not include local and collector roadways. Therefore, the EDCTDM may require refinement for different applications.

The 2017 California Regional Transportation Plan Guidelines (CTC, January 2017) provides guidance on the application of travel demand models. Specifically, that travel demand models should be at an appropriate scale relative to the analysis being conducted. Consistent with this guidance, additional roadway network and TAZ detail was added in El Dorado Hills north of US 50, south of Green Valley Road, east of Sophia Parkway, and west of El Dorado Hills Boulevard to better reflect actual travel time and distance between El Dorado Hills and the City of Folsom. **Figure 2** compares the traffic analysis zone and roadway network detail with and without modification.

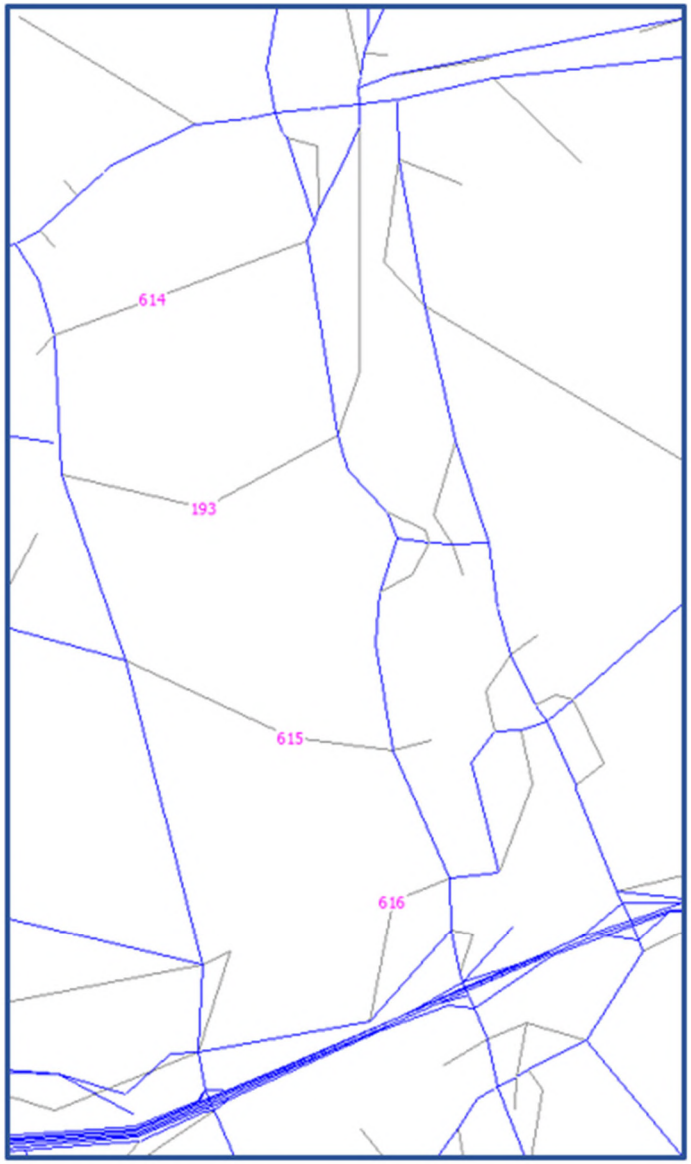
Without modification, the EDCTDM uses 4 TAZs to represent most of the land use in this area with local roadway access modeled using special model links, referred to as TAZ centroid connectors. TAZ centroid connectors provide access for the local development but not for other trips on the network. With this roadway network coding trip lengths are shorter for the land uses represented by the 4 TAZs.

The modified network increased the TAZ detail from 4 to 22 and added roadway links, instead of TAZ centroid connectors, for local access between El Dorado Hills and the City of Folsom in this area. The following public roadway connections were added between El Dorado Hills Boulevard and Sophia Parkway/Empire Ranch Road:

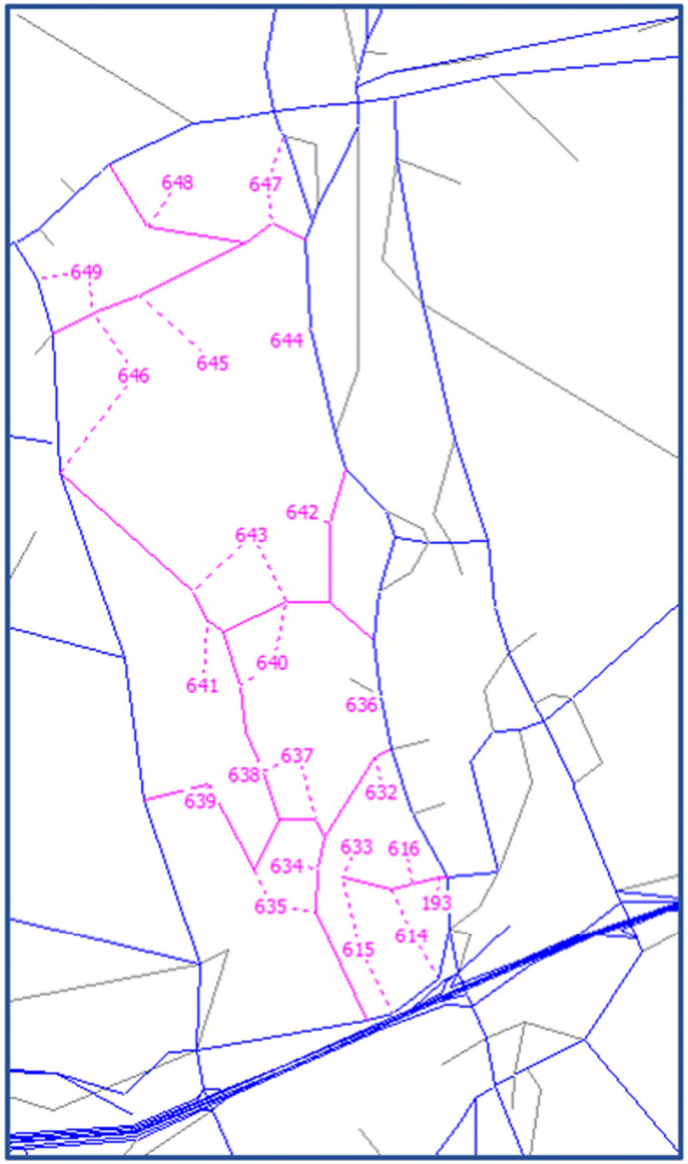
- North Connection: Brittany Way – Suffolk Way – Elmores Way
- North Central Connection: Olson Lane – Gillette Drive – Ridgeview Drive – Muse Drive – Mossridge Way – Powers Drive – Julie Ann Way – Beatty Drive – Alexandra Drive
- South Central Connection: Wilson Boulevard –Ridgeview Drive – Powers Drive – Montridge Way – Crestline Circle – Via Treviso – Via Barlogio – Hildebrand Circle – Woodhead Street
- South Connection: Wilson Boulevard (El Dorado Hills Boulevard to Saratoga Way)

Figure 2 – EDCTDM Model Network Refinements

Without Modification



With Modification



FEHR PEERS

Table 2 compares the estimated travel time from the EDCTDM after modification to field measured travel times. As shown, the model's estimated travel time is consistent with and comparable to field measurements. Therefore, the model is appropriate for application and is more representative of actual travel times and distance than the EDCTDM prior to modification since the model did not include these connections.

Table 2: Travel Time Comparison (Model Estimate vs Field Measurement)			
	Travel Time (minutes)		
Added Roadway Connection	Model Estimate	Field Measurement	Difference (Model – Field)
North	3.3	3.0	+0.3
North Central	5.2	5.1	+0.1
South Central	4.4	4.7	-0.3
South	2.5	2.7	-0.2

The TAZ and roadway network modifications shown in **Figure 2** were made to both the Base Year (2018) and Cumulative Year (2040) EDCTDMs. The modified models were used for the analysis of the proposed project to maintain analysis consistency.

Table 3 compares the VMT efficiency metrics for residential and commercial office land uses in unincorporated El Dorado County with and without the roadway network refinements outlined above and on **Figure 2**. As shown, the VMT efficiency metrics for both residential and commercial office land use increased with the network refinement. The direction and magnitude of the change is reasonable and in the correct direction relative to the network refinements made.

Table 3: VMT Efficiency Metrics with Network Refinements				
	VMT Efficiency Metrics (Unincorporated El Dorado County			
Land Use	Without Refinements	With Refinements	Difference	VMT Threshold (With Refinements)[1]
2018				
Residential	22.5	22.7	+0.2	19.3
Commercial Office	12.8	13.0	+0.2	11.1
2040				
Residential	16.9	17.1	+0.2	14.5
Commercial Office	11.7	12.0	+0.3	10.2

Notes:
[1]85% of Unincorporated El Dorado County VMT per Capita (Residential) and VMT per Employee (Commercial Office)

Study Area Network Refinements

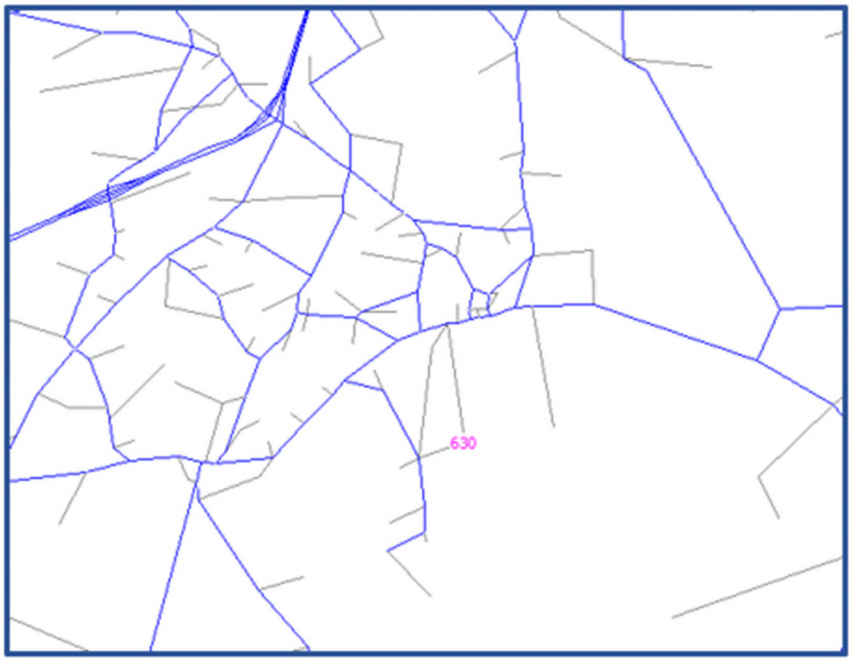
In addition to the model-wide network edits discussed above, the study area required refinement of the TAZ system to better reflect the project land use and geography. In the study area, the EDCTDM did not include a TAZ that was a good representation of the proposed project area. One new TAZ was added in the project area. **Figure 3** shows the study area network with and without the network refinements.

Figure 3 – EDCTDM Study Area Network Refinements

Without Modification



With Modification



FEHR PEERS

The following steps outline the method we used to forecast VMT under existing and cumulative conditions:

- Existing Conditions (2018) – For existing conditions (i.e., baseline conditions), the base year model land use and transportation network were used to estimate baseline (2018) average VMT per capita and average VMT per employee for unincorporated El Dorado County.

  For existing plus project conditions, the project's land use was added to the model, increasing the base year population and employment. Project-generated average VMT per capita.

- Cumulative Conditions (2040) – For cumulative conditions, the future year model was used to estimate cumulative (2040) average VMT per capita.

  For cumulative plus project conditions, the project's land use was added to the model, increasing the cumulative year population and employment. Project-generated average VMT per capita was calculated.

VMT Calculation for Each TAZ

VMT is estimated using a three-step process. In the first step, travel distance between each pair of TAZs for using the loaded networks for the four model time periods (AM Peak Period, Midday Period, PM Peak Period, and Evening Period). Using the loaded network accounts for any increases in trip distance that may result from traffic congestion. In this process, the additional trip lengths associated with the model gateways are added to the trip length estimates. The distance of intrazonal trips is estimated as outlined above.

The second step of the process calculates the VMT for travel between each TAZ pair. The number of vehicle trips modeled between each TAZ pair is multiplied by the trip lengths to estimate the VMT associated with the travel between each TAZ pair for each time period. The VMT from the intrazonal trips is also included in the VMT estimates.

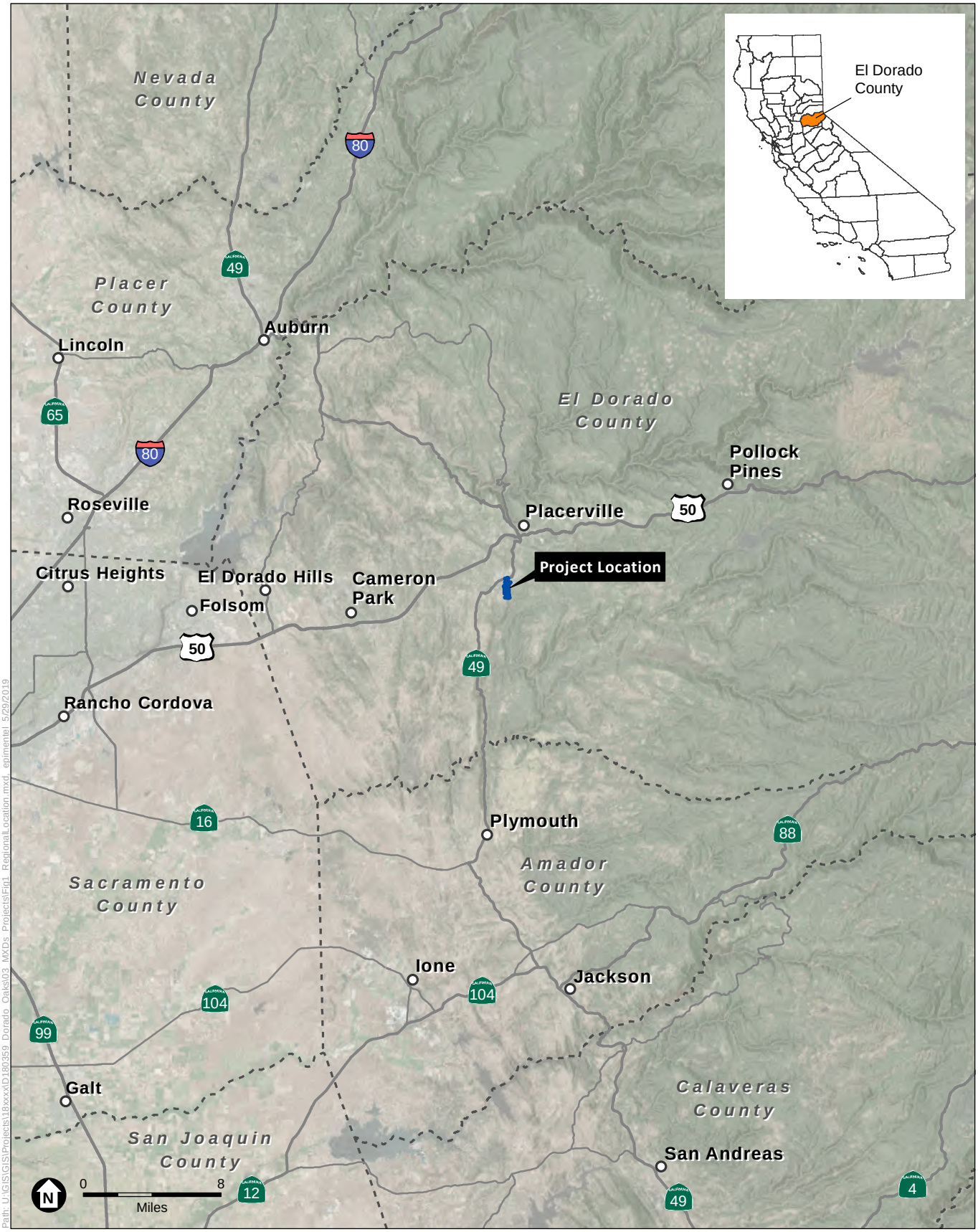
The third step estimates the home-based and home-based work VMT. These estimates are calculated by determining the percentage of vehicle productions and attractions by trip purpose and direction (departures and returns). These percentages are then applied to the total VMT estimates, to determine the VMT by trip purpose and direction. The home-based VMT summarizes VMT by the origin TAZ. The home-based work VMT summarizes VMT by the destination TAZ. The use of home-based and home-based work VMT allows independent analysis of residential and commercial project components.

Project Summary

The proposed Dorado Oaks Tentative Subdivision Map Project is in the unincorporated Diamond Springs Community Region in El Dorado County. **Figure 4** shows the location of the project. As proposed, the

project includes single family and multi-family residential land use. **Table 4** summarizes the project's trip generating land uses.

Table 4: Dorado Oaks Tentative Subdivision Map Project			
Land Use			**Quantity**
Category		**Units**	
Residential	Single Family	Dwellings	157
	Multi-Family		225
	Total		382



SOURCE: Esri, 2018; ESA, 2019

Dorado Oaks Tentative Subdivision Map Project

Figure 4
Project Location

VMT for Dorado Oaks Tentative Subdivision Map Project

Table 5 summarizes the VMT analysis for Dorado Oaks. The VMT calculations for all scenarios are included in **Attachment A**.

Table 5: Dorado Oaks Tentative Subdivision's VMT				
Scenario	Analysis Geography	VMT	Total Population	VMT per Capita
2018 Baseline	Unincorporated El Dorado County	3,088,005	136,108	22.7
2018 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Capita)				19.3
2018 Baseline Plus Project	Project Area	8,544	847	10.1
			VMT Threshold Exceeded?	**No**
2040 Baseline	Unincorporated El Dorado County	3,102,953	181,914	17.1
2040 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Capita)				14.5
2040 Baseline Plus Project	Project Area	5,981	847	7.1
			VMT Threshold Exceeded?	**No**

As shown, the project's VMT per Capita would not exceed the VMT threshold under existing or cumulative conditions. Therefore, the project's impact on VMT would be less than significant.

Attachment A

2018 No Project

VMT Summary by Jurisdiction - 2018 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	297,880	69,463	90,185	20.9	10.6	11.8	2,914	6,581	7,639	14,220	2.26
Unincorporated El Dorado County	3,697,567	3,088,005	428,483	21.9	22.7	13.0	55,055	136,108	33,076	169,184	2.47
				Threshold (85% of Unincorporated El Dorado County)	19.3	11.0					

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	4,166	2,626	327	46	75	16	91	46.0
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,118	32,047	463	525	1,185	34	1,219	19.0
3.00	Unincorporated El Dorado County (Remainder Area)	0	2,949	3,745	42	34	88	0	88	33.6
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,536	1,540	52	16	34	2	36	43.0
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,866	4,046	27	33	73	0	73	39.5
6.00	Unincorporated El Dorado County (Remainder Area)	0	12,336	15,861	354	270	646	9	655	18.8
7.00	Unincorporated El Dorado County (Remainder Area)	0	25,856	33,452	993	516	1,119	71	1,190	21.7
8.00	Unincorporated El Dorado County (Remainder Area)	0	2,718	792	751	14	36	60	96	28.3
9.00	Unincorporated El Dorado County (Remainder Area)	0	28,499	33,395	1,708	482	1,240	117	1,357	21.0
10.00	Outside of County	0	0	0	0	0	0	0	0	-
11.00	Outside of County	0	0	0	0	0	0	0	0	-
12.00	Outside of County	0	39,353	30,977	1,872	663	1,741	96	1,837	21.4
13.00	Outside of County	0	31,126	35,939	676	775	1,995	0	1,995	15.6
14.00	Outside of County	0	64,157	72,184	1,543	1,502	4,068	32	4,100	15.6
15.00	Outside of County	0	497	523	10	10	23	0	23	22.1
16.00	Outside of County	0	56,270	8,955	7,530	149	378	434	812	69.3
17.00	Outside of County	0	0	0	0	0	0	0	0	-
18.00	Outside of County	0	1,564	620	67	41	116	0	116	13.5
19.00	Outside of County	0	0	0	0	0	0	0	0	-
20.00	Outside of County	0	219	18	118	1	1	5	6	36.5
21.00	Outside of County	0	5,220	50	2,538	1	2	112	114	45.8
22.00	Outside of County	0	2,239	269	579	2	6	23	29	77.2
23.00	Outside of County	0	58,930	23,741	6,314	101	273	244	517	114.1
24.00	Outside of County	0	48	30	1	1	1	0	1	47.5
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	0	0	0	0	0	0	0	-
27.00	Outside of County	0	1,320	266	500	2	6	22	28	47.1
28.00	Outside of County	0	12,524	14,738	377	123	332	6	338	37.0
29.00	Outside of County	0	7,845	9,174	242	72	192	5	197	39.8
30.00	Outside of County	0	6,050	0	3,192	0	0	133	133	45.5
31.00	Outside of County	0	5,557	4,119	1,039	44	94	45	139	39.9
32.00	Outside of County	0	24,953	6,831	622	676	1,526	0	1,526	16.3
33.00	Outside of County	0	0	0	0	0	0	0	0	-
34.00	Outside of County	0	8,755	9,498	584	75	191	16	207	42.3
35.00	Outside of County	0	0	0	0	0	0	0	0	-
36.00	Outside of County	0	0	0	0	0	0	0	0	-
37.00	Outside of County	0	5,042	0	2,670	0	0	178	178	28.3
38.00	Outside of County	0	0	0	0	0	0	0	0	-
39.00	Outside of County	0	24,310	22,457	3,316	666	1,569	227	1,796	13.5
40.00	Outside of County	0	112,464	25,842	18,883	916	2,079	1,839	3,918	28.7
41.00	Outside of County	0	30,906	26,574	3,958	544	1,271	203	1,474	21.0
42.00	Outside of County	0	0	0	0	0	0	0	0	-
43.00	Outside of County	0	53,527	63,304	1,203	828	2,045	0	2,045	26.2
44.00	Outside of County	0	79,459	76,876	3,256	1,069	2,614	95	2,709	29.3
45.00	Outside of County	0	101,352	24,241	14,670	906	2,057	1,357	3,414	29.7
46.00	Outside of County	0	0	0	0	0	0	0	0	-
47.00	Outside of County	0	100,800	0	42,751	0	0	2,398	2,398	42.0
48.00	Outside of County	0	71,735	71,936	3,413	1,203	3,068	121	3,189	22.5
49.00	Outside of County	0	152,679	0	78,101	0	0	4,642	4,642	32.9
50.00	Outside of County	0	120,870	85,622	19,287	1,025	2,430	826	3,256	37.1
51.00	Outside of County	0	127,937	69,592	18,217	1,768	4,253	1,237	5,490	23.3
52.00	Outside of County	0	45,479	25,262	4,454	297	667	240	907	50.1
53.00	Outside of County	0	113,884	87,730	8,465	1,335	3,452	377	3,829	29.7
54.00	Outside of County	0	93,497	36,350	38,701	476	1,153	1,827	2,980	31.4
55.00	Outside of County	0	82,632	38,237	12,452	675	1,583	800	2,383	34.7
56.00	Outside of County	0	34,972	40,102	993	820	1,933	4	1,937	18.1
57.00	Outside of County	0	162,092	0	113,336	0	0	7,375	7,375	22.0
58.00	Outside of County	0	43,751	24,397	6,802	465	1,160	388	1,548	28.3
59.00	Outside of County	0	426	110	173	2	4	9	13	32.7
60.00	Outside of County	0	205,449	17,434	103,017	238	478	4,236	4,714	43.6
61.00	Outside of County	0	277,015	193,125	22,414	2,205	5,227	797	6,024	46.0
62.00	Outside of County	0	55,666	318	26,745	4	8	1,150	1,158	48.1

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	114,425	18,521	51,559	340	756	3,083	3,839	29.8
64.00	Outside of County	0	79,435	60,433	11,462	865	2,156	560	2,716	29.2
65.00	Outside of County	0	10,503	11,624	218	136	338	0	338	31.1
66.00	Outside of County	0	62,374	51,041	4,282	826	1,950	172	2,122	29.4
67.00	Outside of County	0	10,409	0	2,797	0	0	178	178	58.5
68.00	Outside of County	0	55,078	32,867	11,777	616	1,314	679	1,993	27.6
69.00	Outside of County	0	143,872	90,934	38,058	1,588	4,122	2,320	6,442	22.3
70.00	Outside of County	0	210,170	801	126,672	0	0	6,956	6,956	30.2
71.00	Outside of County	0	107,548	111,353	4,863	1,231	3,088	121	3,209	33.5
72.00	Outside of County	0	247,277	358	132,064	0	0	5,133	5,133	48.2
73.00	Outside of County	0	122,122	0	80,001	0	0	5,627	5,627	21.7
74.00	Outside of County	0	176,117	21,981	81,378	435	1,022	4,728	5,750	30.6
75.00	Outside of County	0	106,895	77,981	27,259	1,936	4,401	1,866	6,267	17.1
76.00	Outside of County	0	42,176	23,721	5,013	508	1,352	297	1,649	25.6
77.00	Outside of County	0	160,532	79,023	34,071	1,155	2,810	1,659	4,469	35.9
78.00	Outside of County	0	88,858	0	23,882	0	0	1,567	1,567	56.7
79.00	Outside of County	0	971	0	0	0	0	20	20	48.6
80.00	Outside of County	0	50,636	0	23,931	0	0	1,410	1,410	35.9
81.00	Outside of County	0	160,628	0	83,068	0	0	4,951	4,951	32.4
82.00	Outside of County	0	56,271	0	29,838	0	0	1,787	1,787	31.5
83.00	Outside of County	0	0	0	0	0	0	0	0	-
84.00	Outside of County	0	64,935	48,607	6,599	1,226	2,817	405	3,222	20.2
85.00	Outside of County	0	71,715	60,548	4,739	1,295	3,246	253	3,499	20.5
86.00	Outside of County	0	111,986	74,912	11,544	1,968	4,487	754	5,241	21.4
87.00	Outside of County	0	102,508	66,622	12,953	2,114	4,344	800	5,144	19.9
88.00	Outside of County	0	86,778	48,055	11,980	1,099	2,679	762	3,441	25.2
89.00	Outside of County	0	11,255	0	4,682	0	0	293	293	38.4
90.00	Outside of County	0	53,226	0	10,922	0	0	592	592	89.9
91.00	Outside of County	0	123,481	16,293	50,210	383	961	4,100	5,061	24.4
92.00	Outside of County	0	59,947	56,565	3,275	1,139	2,709	141	2,850	21.0
93.00	Outside of County	0	0	0	0	0	0	0	0	-
94.00	Outside of County	0	432	480	9	6	15	0	15	28.8
95.00	Outside of County	0	924	0	440	0	0	27	27	34.2
96.00	Outside of County	0	343	0	174	0	0	12	12	28.6
97.00	Outside of County	0	110	103	2	2	4	0	4	27.5
98.00	Outside of County	0	75,981	352	27,272	10	25	2,289	2,314	32.8
99.00	Outside of County	0	49,798	27,047	11,872	791	1,944	958	2,902	17.2
100.00	Outside of County	0	6,021	7,034	128	84	203	0	203	29.6
101.00	Outside of County	0	12,099	0	6,018	0	0	320	320	37.8
102.00	Outside of County	0	6,000	5,243	996	51	153	53	206	29.1
103.00	Outside of County	0	58,984	68,339	1,381	910	2,200	0	2,200	26.8
104.00	Outside of County	0	0	0	0	0	0	0	0	-
105.00	Outside of County	0	0	0	0	0	0	0	0	-
106.00	Outside of County	0	2,868	0	1,439	0	0	70	70	41.0
107.00	Outside of County	0	86,625	0	45,771	0	0	3,135	3,135	27.6
108.00	Outside of County	0	437	0	202	0	0	15	15	29.1
109.00	Outside of County	0	18,922	0	4,255	0	0	238	238	79.5
110.00	Outside of County	0	63,976	8,774	28,943	205	426	1,610	2,036	31.4
111.00	Outside of County	0	136,717	12,325	24,963	350	728	1,151	1,879	72.8
112.00	Outside of County	0	195,988	38,217	41,788	747	1,946	2,117	4,063	48.2
113.00	Outside of County	0	88,904	0	47,000	0	0	4,022	4,022	22.1
114.00	Outside of County	0	40,814	30,283	7,763	770	1,950	660	2,610	15.6
115.00	Outside of County	0	0	0	0	0	0	0	0	-
116.00	Outside of County	0	0	0	0	0	0	0	0	-
117.00	Outside of County	0	87,124	32,807	23,801	401	1,031	1,492	2,523	34.5
118.00	Outside of County	0	89,463	81,373	3,775	2,313	5,898	187	6,085	14.7
119.00	Outside of County	0	171,753	7,945	75,523	214	522	6,545	7,067	24.3
120.00	Outside of County	0	203,382	0	58,569	0	0	4,131	4,131	49.2
121.00	Outside of County	0	166,199	57,288	22,361	1,642	4,261	1,724	5,985	27.8
122.00	Outside of County	0	67,095	20,235	12,428	619	1,530	1,071	2,601	25.8
123.00	Outside of County	0	52,834	7,535	10,726	200	529	855	1,384	38.2
124.00	Outside of County	0	80,923	55,078	5,562	1,240	2,628	328	2,956	27.4

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	59,993	10,940	9,293	389	801	781	1,582	37.9
126.00	Outside of County	0	15,688	4,356	1,784	136	279	129	408	38.4
127.00	Outside of County	0	38,513	34,433	2,025	800	1,693	117	1,810	21.3
128.00	Outside of County	0	85,653	40,306	11,052	999	2,062	767	2,829	30.3
129.00	Outside of County	0	42,715	46,640	819	994	2,246	0	2,246	19.0
130.00	Outside of County	0	31,447	10,020	4,065	369	740	416	1,156	27.2
131.00	Outside of County	0	75,374	20,584	13,616	607	1,234	1,278	2,512	30.0
132.00	Outside of County	0	33,903	20,607	3,968	407	894	260	1,154	29.4
133.00	Outside of County	0	132,673	63,999	14,735	2,087	5,211	1,475	6,686	19.8
134.00	Outside of County	0	70,311	32,120	18,482	1,075	2,460	1,492	3,952	17.8
135.00	Outside of County	0	43,514	0	23,772	0	0	2,114	2,114	20.6
136.00	Outside of County	0	31,862	28,679	1,647	669	1,669	82	1,751	18.2
137.00	Outside of County	0	138,587	104,455	9,379	2,349	6,735	673	7,408	18.7
138.00	El Dorado Diamond Springs	0	5,531	5,338	430	161	367	25	392	14.1
139.00	El Dorado Diamond Springs	0	3,994	1,768	670	62	135	55	190	21.0
140.00	El Dorado Diamond Springs	0	24,371	265	5,033	10	27	383	410	59.4
141.00	Unincorporated El Dorado County (Remainder Area)	0	2,082	1,974	80	21	49	2	51	41.0
142.00	Unincorporated El Dorado County (Remainder Area)	0	7,364	7,976	178	157	353	0	353	20.9
143.00	Unincorporated El Dorado County (Remainder Area)	0	3,601	3,742	133	93	209	4	213	16.9
144.00	Unincorporated El Dorado County (Remainder Area)	0	3,896	4,004	290	74	186	19	205	19.0
145.00	Unincorporated El Dorado County (Remainder Area)	0	802	837	22	30	69	0	69	11.7
146.00	El Dorado Diamond Springs	0	3,810	1,778	632	64	145	51	196	19.5
147.00	El Dorado Diamond Springs	0	4,298	4,544	135	159	359	0	359	12.0
148.00	Outside of County	0	189,218	257,141	6,738	2,250	5,293	137	5,430	34.8
149.00	Shingle Springs	0	6,891	1,697	1,466	37	98	112	210	32.8
150.00	Unincorporated El Dorado County (Remainder Area)	0	7,722	8,487	225	109	260	3	263	29.4
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,453	2,003	20	23	67	0	67	21.6
152.00	Shingle Springs	0	9,916	6,134	1,454	122	315	99	414	24.0
153.00	Unincorporated El Dorado County (Remainder Area)	0	6,431	6,651	217	178	388	5	393	16.4
154.00	Unincorporated El Dorado County (Remainder Area)	0	3,340	3,259	235	84	196	16	212	15.7
155.00	Shingle Springs	0	2,686	3,144	57	62	161	0	161	16.6
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,329	2,755	39	27	67	0	67	34.6
157.00	El Dorado Hills	0	11,314	14,582	188	274	807	0	807	14.0
158.00	Cameron Park	0	22,047	24,487	1,060	598	1,373	72	1,445	15.3
159.00	Cameron Park	0	12,635	16,235	239	340	878	1	879	14.4
160.00	Shingle Springs	0	7,853	9,562	164	194	501	0	501	15.7
161.00	El Dorado Hills	0	6,106	7,825	93	105	283	0	283	21.6
162.00	El Dorado Hills	0	71,569	99,177	978	1,503	4,414	0	4,414	16.2
163.00	El Dorado Hills	0	350	364	39	7	21	4	25	14.2
164.00	El Dorado Hills	0	27,784	0	14,365	0	0	1,232	1,232	22.6
165.00	El Dorado Hills	0	16,363	19,623	373	373	997	0	997	16.4
166.00	Outside of County	0	41,447	42,198	1,373	749	1,892	49	1,941	21.4
167.00	El Dorado Hills	0	50,123	52,254	2,138	1,297	2,904	55	2,959	16.9
168.00	El Dorado Hills	0	30,546	36,220	944	1,125	2,519	9	2,528	12.1
169.00	El Dorado Hills	0	102,894	154	21,197	0	0	1,688	1,688	61.0
170.00	El Dorado Hills	0	27,560	0	15,243	0	0	1,357	1,357	20.3
171.00	El Dorado Hills	0	14,234	12,753	758	441	790	20	810	17.6
172.00	El Dorado Hills	0	8,204	0	1,963	0	0	168	168	48.8
173.00	El Dorado Hills	0	29,687	0	6,376	0	0	547	547	54.3
174.00	Unincorporated El Dorado County (Remainder Area)	0	2,218	1,539	249	15	37	11	48	45.9
175.00	Unincorporated El Dorado County (Remainder Area)	0	955	876	97	11	26	5	31	30.6
176.00	Unincorporated El Dorado County (Remainder Area)	0	2,048	2,324	41	29	69	0	69	29.6
177.00	Unincorporated El Dorado County (Remainder Area)	0	827	702	119	10	25	7	32	25.9
178.00	Unincorporated El Dorado County (Remainder Area)	0	2,085	2,421	40	30	77	0	77	27.0
179.00	Unincorporated El Dorado County (Remainder Area)	0	10	17	0	1	3	0	3	3.7
180.00	El Dorado Hills	0	3,243	3,924	54	58	149	0	149	21.7
181.00	El Dorado Hills	0	1,418	8	645	1	3	58	61	23.4
182.00	Cameron Park	0	51,882	68,033	795	1,186	3,202	0	3,202	16.2
183.00	Unincorporated El Dorado County (Remainder Area)	0	6,525	7,645	127	152	355	0	355	18.4
184.00	Cameron Park	0	28,763	20,492	3,325	357	964	300	1,264	22.8
185.00	Cameron Park	0	5,401	6,636	94	149	342	0	342	15.8
186.00	Cameron Park	0	647	102	236	3	7	28	35	18.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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187.00	Cameron Park	0	10,281	9,793	1,023	239	549	85	634	16.2
188.00	Cameron Park	0	7,327	7,048	803	188	432	69	501	14.6
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,895	3,688	44	37	104	0	104	28.0
190.00	Unincorporated El Dorado County (Remainder Area)	0	11,290	14,830	175	237	663	0	663	17.0
191.00	El Dorado Hills	0	824	1,100	11	19	53	0	53	15.5
192.00	El Dorado Hills	0	1,093	1,444	15	25	70	0	70	15.7
193.00	El Dorado Hills	0	8,893	4,380	2,565	100	253	246	499	17.8
194.00	El Dorado Hills	0	18,209	23,760	280	439	1,285	0	1,285	14.2
195.00	El Dorado Hills	0	1,605	531	184	10	26	14	40	40.6
196.00	Outside of County	0	45,981	51,299	1,506	923	2,503	82	2,585	17.8
197.00	El Dorado Hills	0	3,954	4,957	65	86	219	0	219	18.0
198.00	El Dorado Hills	0	58,474	46,936	4,592	887	2,482	453	2,935	19.9
199.00	El Dorado Hills	0	11,088	3,692	1,539	62	173	120	293	37.8
200.00	El Dorado Hills	0	3,335	333	740	7	18	67	85	39.3
201.00	El Dorado Hills	0	13,472	8,479	2,757	150	439	301	740	18.2
202.00	El Dorado Hills	0	41,829	41,531	2,356	737	2,062	199	2,261	18.5
203.00	El Dorado Hills	0	52,615	66,781	1,839	1,043	3,061	139	3,200	16.4
204.00	El Dorado Hills	0	18,761	20,036	597	362	1,067	41	1,108	16.9
205.00	El Dorado Hills	0	628	0	288	0	0	30	30	20.9
206.00	El Dorado Hills	0	2,124	2,756	30	52	153	0	153	13.9
207.00	El Dorado Hills	0	15,051	19,923	231	296	869	0	869	17.3
208.00	Unincorporated El Dorado County (Remainder Area)	0	412	558	5	9	26	0	26	15.6
209.00	El Dorado Hills	0	2,999	3,557	172	55	161	14	175	17.1
210.00	El Dorado Hills	0	5,743	7,581	87	125	366	0	366	15.7
211.00	Unincorporated El Dorado County (Remainder Area)	0	167	231	2	4	11	0	11	15.0
212.00	El Dorado Hills	0	1,871	2,523	25	35	103	0	103	18.2
213.00	Unincorporated El Dorado County (Remainder Area)	0	6,812	8,992	101	116	323	0	323	21.1
214.00	Unincorporated El Dorado County (Remainder Area)	0	686	922	10	8	19	0	19	35.4
215.00	El Dorado Hills	0	6,138	8,031	95	113	316	0	316	19.4
216.00	Unincorporated El Dorado County (Remainder Area)	0	400	520	5	5	12	0	12	33.1
217.00	Unincorporated El Dorado County (Remainder Area)	0	740	957	10	11	31	0	31	24.0
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,723	2,237	25	28	78	0	78	22.0
219.00	Unincorporated El Dorado County (Remainder Area)	0	4,456	2,399	1,004	28	78	77	155	28.8
220.00	Unincorporated El Dorado County (Remainder Area)	0	581	762	8	9	25	0	25	23.2
221.00	El Dorado Hills	0	43,247	59,070	587	876	2,359	0	2,359	18.3
222.00	Cameron Park	0	2,699	1,423	256	26	71	26	97	28.0
223.00	Cameron Park	0	4,072	5,524	52	103	279	0	279	14.6
224.00	Unincorporated El Dorado County (Remainder Area)	0	5,457	6,394	348	95	258	29	287	19.0
225.00	Unincorporated El Dorado County (Remainder Area)	0	11,249	7,664	978	92	270	79	349	32.2
226.00	Cameron Park	0	10,028	8,755	771	131	384	76	460	21.8
227.00	Cameron Park	0	182	177	13	5	12	2	14	12.9
228.00	Cameron Park	0	23,398	31,104	509	705	1,703	20	1,723	13.6
229.00	El Dorado Hills	0	405	556	4	9	24	0	24	16.7
230.00	El Dorado Hills	0	590	809	6	12	35	0	35	16.7
231.00	Unincorporated El Dorado County (Remainder Area)	0	1,019	332	239	5	15	28	43	23.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	2,109	2,821	28	33	92	0	92	23.0
233.00	Cameron Park	0	6,653	3,846	768	92	211	101	312	21.3
234.00	Cameron Park	0	47,144	41,546	4,548	1,004	2,306	587	2,893	16.3
235.00	Cameron Park	0	33,832	44,754	479	861	2,214	0	2,214	15.3
236.00	Cameron Park	0	17,939	24,296	298	468	1,204	9	1,213	14.8
237.00	Cameron Park	0	2,846	3,551	47	75	172	0	172	16.5
238.00	Cameron Park	0	15,143	13,696	2,017	280	676	199	875	17.3
239.00	Cameron Park	0	1,950	1,618	135	32	87	16	103	19.0
240.00	Unincorporated El Dorado County (Remainder Area)	0	7,287	9,730	107	127	345	0	345	21.1
241.00	Cameron Park	0	6,848	9,117	105	164	445	2	447	15.3
242.00	Cameron Park	0	806	1,102	9	22	60	0	60	13.5
243.00	Cameron Park	0	2,409	2,931	120	52	141	13	154	15.6
244.00	Unincorporated El Dorado County (Remainder Area)	0	1,391	1,801	23	22	57	0	57	24.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	842	1,066	11	10	29	0	29	29.1
246.00	Unincorporated El Dorado County (Remainder Area)	0	4,452	6,056	59	63	182	0	182	24.4
247.00	Unincorporated El Dorado County (Remainder Area)	0	14,550	16,665	351	296	646	0	646	22.5
248.00	Unincorporated El Dorado County (Remainder Area)	0	10,727	13,056	226	185	441	0	441	24.3

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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249.00	Unincorporated El Dorado County (Remainder Area)	0	1,911	2,086	39	27	59	0	59	32.4
250.00	Unincorporated El Dorado County (Remainder Area)	0	3,223	3,854	63	53	123	0	123	26.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	4,465	5,223	91	88	224	0	224	20.0
252.00	Unincorporated El Dorado County (Remainder Area)	0	20,232	24,935	422	434	1,130	0	1,130	17.9
253.00	Unincorporated El Dorado County (Remainder Area)	0	8,637	10,809	166	147	403	0	403	21.4
254.00	Unincorporated El Dorado County (Remainder Area)	0	6,155	7,315	128	116	295	0	295	20.9
255.00	Cameron Park	0	17,028	0	5,087	0	0	426	426	40.0
256.00	Cameron Park	0	46,408	1,915	13,815	47	121	1,042	1,163	39.9
257.00	Shingle Springs	0	30,259	6,774	11,179	153	389	960	1,349	22.4
258.00	Unincorporated El Dorado County (Remainder Area)	0	1,485	1,749	51	21	58	2	60	25.0
259.00	Unincorporated El Dorado County (Remainder Area)	0	1,819	2,262	31	30	78	0	78	23.3
260.00	Shingle Springs	0	5,677	58	1,817	2	4	146	150	37.7
261.00	Shingle Springs	0	15,334	4,173	3,626	92	252	282	534	28.7
262.00	Shingle Springs	0	12,901	4,871	3,014	121	308	238	546	23.6
263.00	Shingle Springs	0	6,135	4,995	534	108	296	35	331	18.5
264.00	Shingle Springs	0	4,761	2,290	629	50	137	45	182	26.2
265.00	Unincorporated El Dorado County (Remainder Area)	0	2,408	2,965	44	45	117	0	117	20.6
266.00	Unincorporated El Dorado County (Remainder Area)	0	2,362	2,170	117	42	92	4	96	24.7
267.00	Unincorporated El Dorado County (Remainder Area)	0	5,496	6,891	127	129	336	0	336	16.4
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,278	3,761	133	69	180	6	186	17.7
269.00	Unincorporated El Dorado County (Remainder Area)	0	9,325	10,939	228	204	516	1	517	18.0
270.00	Unincorporated El Dorado County (Remainder Area)	0	2,473	3,221	42	44	113	0	113	21.8
271.00	Unincorporated El Dorado County (Remainder Area)	0	8,088	10,053	199	150	379	5	384	21.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	6,800	7,760	363	131	347	23	370	18.4
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,904	10,189	255	134	391	12	403	19.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	15,445	13,859	1,331	233	618	99	717	21.6
275.00	Unincorporated El Dorado County (Remainder Area)	0	15,495	18,287	458	321	828	13	841	18.4
276.00	Cameron Park	0	9,014	10,844	268	224	541	12	553	16.3
277.00	Cameron Park	0	6,258	7,932	106	161	416	0	416	15.1
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,210	6,797	84	91	247	0	247	21.1
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,678	3,507	42	45	122	0	122	21.9
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,778	2,200	33	37	98	0	98	18.1
281.00	Unincorporated El Dorado County (Remainder Area)	0	3,869	3,572	543	59	156	36	192	20.1
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,747	2,152	33	39	103	0	103	16.9
283.00	Shingle Springs	0	16,088	3,776	2,073	0	0	161	161	99.9
284.00	Shingle Springs	0	1,621	1,091	305	25	65	25	90	18.1
285.00	Unincorporated El Dorado County (Remainder Area)	0	5,130	1,491	887	12	26	66	92	55.5
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,776	2,318	29	36	95	0	95	18.6
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,717	2,179	29	34	88	0	88	19.6
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,324	46	51	135	0	135	19.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	360	514	4	8	23	0	23	15.4
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,416	3,228	37	44	129	0	129	18.8
291.00	Unincorporated El Dorado County (Remainder Area)	0	9,922	12,933	181	188	463	0	463	21.4
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,576	6,311	64	72	210	0	210	21.8
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,230	1,276	32	34	77	0	77	15.9
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,021	4,645	94	97	247	0	247	16.3
295.00	Unincorporated El Dorado County (Remainder Area)	0	148,908	5,014	26,719	110	284	1,491	1,775	83.9
296.00	El Dorado Diamond Springs	0	9,633	6,665	855	117	305	56	361	26.7
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,430	3,140	57	70	182	0	182	13.3
298.00	Unincorporated El Dorado County (Remainder Area)	0	3,313	3,810	75	79	206	0	206	16.1
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	6,062	106	106	268	0	268	19.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,197	1,390	26	28	71	0	71	16.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	1	2	0	2	0.1
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,967	2,475	500	57	130	33	163	24.4
303.00	El Dorado Diamond Springs	0	3,470	3,661	91	106	231	0	231	15.0
304.00	El Dorado Diamond Springs	0	6,356	379	2,386	12	27	224	251	25.3
305.00	El Dorado Diamond Springs	0	7,603	0	3,158	1	2	283	285	26.7
306.00	El Dorado Diamond Springs	0	1,629	375	629	10	22	55	77	21.2
307.00	El Dorado Diamond Springs	0	617	494	38	16	36	2	38	16.2
308.00	El Dorado Diamond Springs	0	272	273	15	11	25	1	26	10.5
309.00	El Dorado Diamond Springs	0	533	434	52	14	32	4	36	14.8
310.00	El Dorado Diamond Springs	0	4,146	794	1,294	26	59	122	181	22.9

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311.00	El Dorado Diamond Springs	0	8,533	1,197	2,120	38	87	158	245	34.9
312.00	El Dorado Diamond Springs	0	870	891	49	31	70	3	73	11.9
313.00	El Dorado Diamond Springs	0	23,390	4,175	6,912	38	99	506	605	38.7
314.00	El Dorado Diamond Springs	0	2,981	3,093	154	81	206	8	214	13.9
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	342	346	9	13	30	0	30	11.5
317.00	El Dorado Diamond Springs	0	206	210	5	8	18	0	18	11.3
318.00	Unincorporated El Dorado County (Remainder Area)	0	4,322	4,680	137	128	326	2	328	13.2
319.00	El Dorado Diamond Springs	0	1,220	1,220	91	38	99	6	105	11.6
320.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	2,179	537	18	44	39	83	61.1
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,291	6,703	102	104	256	0	256	20.6
322.00	Unincorporated El Dorado County (Remainder Area)	0	7,460	8,020	553	153	387	33	420	17.8
323.00	Unincorporated El Dorado County (Remainder Area)	0	2,846	3,454	85	51	129	4	133	21.4
324.00	Unincorporated El Dorado County (Remainder Area)	0	3,638	4,777	61	64	165	0	165	22.1
325.00	Unincorporated El Dorado County (Remainder Area)	0	706	878	14	16	39	0	39	17.9
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,171	2,731	54	49	121	1	122	17.8
327.00	Placerville	0	1,704	2,003	39	40	101	0	101	16.9
328.00	Unincorporated El Dorado County (Remainder Area)	0	847	998	18	19	48	0	48	17.7
329.00	Placerville	0	4,862	5,451	124	139	317	0	317	15.3
330.00	Unincorporated El Dorado County (Remainder Area)	0	2,701	3,124	65	73	184	0	184	14.7
331.00	Unincorporated El Dorado County (Remainder Area)	0	5,824	7,134	116	110	274	0	274	21.3
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,541	1,805	36	47	104	0	104	14.8
333.00	Unincorporated El Dorado County (Remainder Area)	0	4,529	5,675	86	91	226	0	226	20.1
334.00	Unincorporated El Dorado County (Remainder Area)	0	3,809	1,175	1,315	26	58	110	168	22.7
335.00	Unincorporated El Dorado County (Remainder Area)	0	3,013	3,285	124	77	165	5	170	17.7
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,225	1,475	25	30	70	0	70	17.4
337.00	Unincorporated El Dorado County (Remainder Area)	0	9,197	7,630	869	121	302	62	364	25.3
338.00	Unincorporated El Dorado County (Remainder Area)	0	14,133	17,909	370	322	831	14	845	16.7
339.00	Unincorporated El Dorado County (Remainder Area)	0	8,581	12,365	118	188	410	0	410	20.9
340.00	Unincorporated El Dorado County (Remainder Area)	0	6,896	8,586	224	93	205	14	219	31.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,489	1,918	86	31	71	8	79	18.9
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,620	3,271	48	48	124	0	124	21.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	3,485	4,097	63	53	116	0	116	30.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	3,762	4,481	68	55	120	0	120	31.3
345.00	Unincorporated El Dorado County (Remainder Area)	0	1,796	1,949	35	29	63	0	63	28.4
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,272	1,399	24	22	49	0	49	25.7
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,911	3,675	48	42	108	0	108	26.9
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,799	2,993	63	49	110	0	110	25.4
349.00	Unincorporated El Dorado County (Remainder Area)	0	6,297	8,014	252	83	191	18	209	30.1
350.00	Unincorporated El Dorado County (Remainder Area)	0	1,179	1,682	17	22	48	0	48	24.5
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,305	1,880	16	23	50	0	50	26.0
352.00	Unincorporated El Dorado County (Remainder Area)	0	1,857	2,624	24	29	63	0	63	29.3
353.00	Unincorporated El Dorado County (Remainder Area)	0	9,027	13,265	99	167	365	1	366	24.7
354.00	Unincorporated El Dorado County (Remainder Area)	0	5,501	3,517	746	53	116	77	193	28.5
355.00	Placerville	1	14,292	6,555	2,957	241	550	244	794	18.0
356.00	Placerville	1	2,499	2,652	73	91	195	0	195	12.8
357.00	Unincorporated El Dorado County (Remainder Area)	0	4,889	3,827	367	89	209	21	230	21.3
358.00	Placerville	0	5,870	2,945	1,187	81	190	98	288	20.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	4,285	5,085	93	105	254	0	254	16.9
360.00	Unincorporated El Dorado County (Remainder Area)	0	5,338	5,780	239	98	237	10	247	21.6
361.00	Placerville	1	17,728	10,267	4,156	458	938	392	1,330	13.3
362.00	Placerville	1	46,119	5,945	10,928	252	591	876	1,467	31.4
363.00	Unincorporated El Dorado County (Remainder Area)	0	327	343	9	13	31	0	31	10.6
364.00	Placerville	0	4,044	3,540	416	138	328	30	358	11.3
365.00	El Dorado Diamond Springs	0	10,889	8,653	1,046	322	722	71	793	13.7
366.00	El Dorado Diamond Springs	0	380	274	42	15	31	4	35	10.8
367.00	El Dorado Diamond Springs	0	4,054	0	1,960	0	0	197	197	20.6
368.00	El Dorado Diamond Springs	0	1,589	1,730	48	68	149	0	149	10.7
369.00	El Dorado Diamond Springs	0	5,670	5,750	283	228	507	13	520	10.9
370.00	El Dorado Diamond Springs	0	6,432	0	3,038	0	0	303	303	21.2
371.00	El Dorado Diamond Springs	0	740	795	18	21	47	0	47	15.9
372.00	El Dorado Diamond Springs	0	16,774	7,739	2,417	195	433	211	644	26.0

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
373.00	El Dorado Diamond Springs	0	652	643	19	26	59	0	59	11.1
374.00	El Dorado Diamond Springs	0	414	329	29	13	28	2	30	13.6
375.00	El Dorado Diamond Springs	0	368	368	10	14	32	0	32	11.7
376.00	El Dorado Diamond Springs	0	973	935	57	34	77	3	80	12.2
377.00	El Dorado Diamond Springs	0	561	329	157	13	29	14	43	12.9
378.00	El Dorado Diamond Springs	0	667	652	19	27	59	0	59	11.3
379.00	El Dorado Diamond Springs	0	1,102	1,113	31	48	105	0	105	10.5
380.00	El Dorado Diamond Springs	0	256	245	7	12	26	0	26	9.7
381.00	El Dorado Diamond Springs	0	158	143	5	7	15	0	15	10.3
382.00	El Dorado Diamond Springs	0	261	239	8	11	24	0	24	10.8
383.00	Unincorporated El Dorado County (Remainder Area)	0	1,591	1,742	40	46	102	0	102	15.6
384.00	El Dorado Diamond Springs	0	3,654	3,970	95	120	267	0	267	13.7
385.00	El Dorado Diamond Springs	0	11,717	13,659	337	451	1,002	0	1,002	11.7
386.00	El Dorado Diamond Springs	0	2,657	2,922	67	90	200	0	200	13.3
387.00	El Dorado Diamond Springs	0	1,172	929	107	36	80	8	88	13.3
388.00	El Dorado Diamond Springs	0	6,359	0	3,067	0	0	303	303	21.0
389.00	El Dorado Diamond Springs	0	6,129	11	2,616	2	4	264	268	22.8
390.00	El Dorado Diamond Springs	0	4,307	3,894	359	182	379	23	402	10.7
391.00	El Dorado Diamond Springs	0	2,173	196	547	11	23	54	77	28.3
392.00	El Dorado Diamond Springs	0	671	600	23	28	58	0	58	11.5
393.00	El Dorado Diamond Springs	0	9,002	6,354	1,004	268	605	68	673	13.4
394.00	El Dorado Diamond Springs	0	186	202	5	8	22	0	22	8.5
395.00	Placerville	1	62,226	1,584	26,085	74	166	2,253	2,419	25.7
396.00	El Dorado Diamond Springs	0	28,140	0	5,846	0	0	439	439	64.1
397.00	El Dorado Diamond Springs	0	1,329	1,264	69	50	114	3	117	11.4
398.00	El Dorado Diamond Springs	0	413	322	38	14	32	3	35	11.9
399.00	El Dorado Diamond Springs	0	1,126	1,133	32	43	97	0	97	11.6
400.00	El Dorado Diamond Springs	0	313	262	11	16	33	0	33	9.4
401.00	Placerville	0	8,987	658	2,628	28	63	213	276	32.6
402.00	El Dorado Diamond Springs	0	3,541	1,448	1,078	51	133	106	239	14.8
403.00	El Dorado Diamond Springs	0	23,814	3,632	7,792	124	258	654	912	26.1
404.00	El Dorado Diamond Springs	0	1,343	409	459	19	42	49	91	14.8
405.00	El Dorado Diamond Springs	0	169	150	5	9	20	0	20	8.6
406.00	El Dorado Diamond Springs	0	18,956	553	3,787	24	53	286	339	56.0
407.00	El Dorado Diamond Springs	0	9,540	18	3,373	1	2	309	311	30.7
408.00	El Dorado Diamond Springs	0	4,167	22	1,742	1	2	182	184	22.6
409.00	Placerville	0	18,695	3,018	5,656	104	248	445	693	27.0
410.00	El Dorado Diamond Springs	0	24,455	14,637	3,607	426	1,031	277	1,308	18.7
411.00	Placerville	1	50,523	6,155	13,292	298	712	1,271	1,983	25.5
412.00	Unincorporated El Dorado County (Remainder Area)	0	2,967	3,203	79	86	206	0	206	14.4
413.00	Placerville	0	3,607	3,787	102	126	301	0	301	12.0
414.00	El Dorado Diamond Springs	0	2,618	129	1,180	7	15	120	135	19.5
415.00	Unincorporated El Dorado County (Remainder Area)	0	434	442	12	18	40	0	40	10.7
416.00	El Dorado Diamond Springs	0	148	145	4	9	19	0	19	7.9
417.00	Placerville	1	9,685	1,098	2,868	45	114	278	392	24.7
418.00	Placerville	1	3,170	0	673	0	0	64	64	49.5
419.00	Placerville	1	3,283	0	844	0	0	85	85	38.6
420.00	Placerville	1	1,760	957	498	42	100	52	152	11.5
421.00	Placerville	1	1,662	1,578	97	68	163	5	168	9.9
422.00	Placerville	1	52,703	6,323	24,673	278	652	1,907	2,559	20.6
423.00	Unincorporated El Dorado County (Remainder Area)	0	460	482	12	20	48	0	48	9.6
424.00	Placerville	0	10,237	4,839	2,517	171	391	228	619	16.6
425.00	Placerville	0	52,855	32,203	5,947	1,167	2,617	563	3,180	16.6
426.00	Placerville	0	859	990	19	33	82	0	82	10.5
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,962	4,548	92	93	232	0	232	17.1
428.00	Unincorporated El Dorado County (Remainder Area)	0	643	741	15	22	55	0	55	11.7
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,310	1,650	34	35	83	0	83	15.9
430.00	Unincorporated El Dorado County (Remainder Area)	0	2,529	2,476	178	58	137	10	147	17.2
431.00	Placerville	1	1,794	471	655	22	45	60	105	17.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,284	10,519	2,696	309	729	229	958	16.0
433.00	Placerville	1	10,428	9,659	707	481	1,041	36	1,077	9.7
434.00	Placerville	1	673	587	23	33	71	0	71	9.5

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435.00	Placerville	1	1,186	645	243	36	77	27	104	11.4
436.00	Unincorporated El Dorado County (Remainder Area)	0	970	1,150	20	25	62	0	62	15.6
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,377	5,676	248	117	287	12	299	18.0
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,578	5,269	232	124	278	11	289	19.3
439.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	6,310	172	156	350	3	353	15.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	1,394	1,100	177	28	63	15	78	17.9
441.00	Placerville	1	362	377	9	12	29	0	29	12.6
442.00	Placerville	1	13,108	10,677	1,035	313	768	69	837	15.7
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,458	1,567	36	38	85	0	85	17.1
444.00	Unincorporated El Dorado County (Remainder Area)	0	200	220	5	8	19	0	19	10.4
445.00	Placerville	0	1,044	902	151	23	56	11	67	15.5
446.00	Placerville	1	1,761	851	247	25	59	19	78	22.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	3,244	3,964	67	76	189	0	189	17.1
448.00	Placerville	0	1,803	2,094	74	53	130	4	134	13.5
449.00	Unincorporated El Dorado County (Remainder Area)	0	540	573	14	14	30	0	30	18.0
450.00	Unincorporated El Dorado County (Remainder Area)	0	3,267	2,678	392	84	180	31	211	15.5
451.00	Unincorporated El Dorado County (Remainder Area)	0	980	1,034	25	27	58	0	58	16.9
452.00	Placerville	0	6,274	4,034	500	121	259	33	292	21.5
453.00	Placerville	1	2,919	3,086	120	145	310	1	311	9.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	567	544	18	25	54	0	54	10.6
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,712	3,062	67	73	172	0	172	15.8
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,880	2,061	48	51	109	0	109	17.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	2,808	3,060	129	62	137	5	142	19.8
458.00	Placerville	0	2,940	2,602	343	67	157	26	183	16.0
459.00	Placerville	0	309	353	7	11	26	0	26	12.0
460.00	Unincorporated El Dorado County (Remainder Area)	0	1,457	966	264	22	47	20	67	21.7
461.00	Unincorporated El Dorado County (Remainder Area)	0	1,567	222	616	6	14	59	73	21.4
462.00	Unincorporated El Dorado County (Remainder Area)	0	5,224	1,278	1,752	31	66	125	191	27.3
463.00	Unincorporated El Dorado County (Remainder Area)	0	4,473	7,256	39	85	194	0	194	23.0
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,526	3,312	39	47	104	0	104	24.4
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,956	5,701	114	58	134	16	150	26.4
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,542	4,418	201	61	139	22	161	22.0
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,484	3,848	23	39	89	0	89	27.9
468.00	Unincorporated El Dorado County (Remainder Area)	0	6,778	9,766	125	120	277	6	283	24.0
469.00	Unincorporated El Dorado County (Remainder Area)	0	4,092	5,682	136	59	131	15	146	28.1
470.00	Unincorporated El Dorado County (Remainder Area)	0	2,031	3,078	27	32	73	1	74	27.4
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,477	2,039	54	23	53	6	59	25.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,953	2,297	146	26	59	20	79	24.6
473.00	Unincorporated El Dorado County (Remainder Area)	0	602	576	30	10	23	2	25	24.1
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,692	2,178	28	37	81	0	81	20.9
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,797	2,384	27	38	83	0	83	21.7
476.00	Unincorporated El Dorado County (Remainder Area)	0	859	1,123	12	16	41	0	41	20.8
477.00	Unincorporated El Dorado County (Remainder Area)	0	2,038	2,558	124	30	69	15	84	24.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,481	1,914	24	30	66	0	66	22.5
479.00	Unincorporated El Dorado County (Remainder Area)	0	4,068	3,155	440	51	118	37	155	26.3
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,298	1,999	13	20	46	0	46	28.4
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	2,030	15	20	44	0	44	30.4
482.00	Unincorporated El Dorado County (Remainder Area)	0	5,633	7,942	92	74	163	3	166	34.0
483.00	Unincorporated El Dorado County (Remainder Area)	0	4,435	5,257	173	115	249	9	258	17.2
484.00	Unincorporated El Dorado County (Remainder Area)	0	6,755	5,646	945	91	227	114	341	19.8
485.00	Unincorporated El Dorado County (Remainder Area)	0	1,058	1,522	11	15	37	0	37	28.3
486.00	Unincorporated El Dorado County (Remainder Area)	0	4,063	5,882	47	69	156	0	156	26.1
487.00	Unincorporated El Dorado County (Remainder Area)	0	11,817	11,343	739	221	519	36	555	21.3
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,531	7,566	86	107	242	0	242	22.9
489.00	Unincorporated El Dorado County (Remainder Area)	0	6,881	7,088	660	133	300	58	358	19.2
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,174	1,529	19	24	60	0	60	19.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,374	9,114	177	160	399	3	402	18.3
492.00	Unincorporated El Dorado County (Remainder Area)	0	5,053	4,473	408	71	176	31	207	24.4
493.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	4,560	369	72	178	26	204	24.9
494.00	Unincorporated El Dorado County (Remainder Area)	0	3,256	3,963	138	68	170	10	180	18.1
495.00	Unincorporated El Dorado County (Remainder Area)	0	652	851	11	16	40	0	40	16.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,363	4,566	830	81	201	67	268	27.5

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497.00	Unincorporated El Dorado County (Remainder Area)	0	4,324	5,722	101	88	224	3	227	19.0
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,446	4,471	104	70	158	6	164	21.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,340	1,788	22	30	75	0	75	17.9
500.00	Unincorporated El Dorado County (Remainder Area)	0	4,091	1,341	603	11	26	51	77	53.3
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,805	1,018	768	22	49	83	132	21.3
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,007	7,684	351	117	272	18	290	24.2
503.00	Unincorporated El Dorado County (Remainder Area)	0	4,159	0	1,010	1	2	76	78	53.2
504.00	Unincorporated El Dorado County (Remainder Area)	0	6,094	6,503	344	141	313	19	332	18.4
505.00	Unincorporated El Dorado County (Remainder Area)	0	73	86	1	3	7	0	7	11.0
506.00	Unincorporated El Dorado County (Remainder Area)	0	1,026	1,245	22	28	62	0	62	16.5
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,748	2,382	392	50	116	37	153	17.9
508.00	Unincorporated El Dorado County (Remainder Area)	0	6,688	3,507	1,838	85	184	186	370	18.1
509.00	Unincorporated El Dorado County (Remainder Area)	0	392	428	22	12	27	2	29	13.7
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,230	3,509	157	92	199	10	209	15.5
511.00	Unincorporated El Dorado County (Remainder Area)	0	2,738	1,886	359	45	105	33	138	19.9
512.00	Unincorporated El Dorado County (Remainder Area)	0	2,833	1,982	367	37	86	27	113	25.1
513.00	Unincorporated El Dorado County (Remainder Area)	0	7,428	10,752	84	142	354	0	354	21.0
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,897	46,989	311	622	1,551	0	1,551	20.6
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,604	4,785	105	69	176	8	184	19.6
516.00	Unincorporated El Dorado County (Remainder Area)	0	8,117	11,779	87	142	362	0	362	22.4
517.00	Unincorporated El Dorado County (Remainder Area)	0	18,953	21,253	1,114	388	857	101	958	19.8
518.00	Unincorporated El Dorado County (Remainder Area)	0	11,917	15,759	307	289	671	17	688	17.3
519.00	Unincorporated El Dorado County (Remainder Area)	0	5,880	7,837	191	142	330	12	342	17.2
520.00	Unincorporated El Dorado County (Remainder Area)	0	11,943	16,149	268	266	617	12	629	19.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	10,860	13,145	581	290	641	60	701	15.5
522.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	7,230	64	85	221	0	221	23.1
523.00	Unincorporated El Dorado County (Remainder Area)	0	16,440	10,403	1,911	240	588	206	794	20.7
524.00	Unincorporated El Dorado County (Remainder Area)	0	14,687	12,653	1,114	205	490	103	593	24.8
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,887	7,158	44	85	199	0	199	24.5
526.00	Unincorporated El Dorado County (Remainder Area)	0	245	336	3	5	12	0	12	20.1
527.00	Unincorporated El Dorado County (Remainder Area)	0	7,769	9,527	361	162	380	38	418	18.6
528.00	Unincorporated El Dorado County (Remainder Area)	0	59,936	84,546	793	1,001	2,429	72	2,501	24.0
529.00	Unincorporated El Dorado County (Remainder Area)	0	918	1,150	13	15	36	0	36	25.3
530.00	Unincorporated El Dorado County (Remainder Area)	0	12,922	17,323	192	191	462	0	462	28.0
531.00	Unincorporated El Dorado County (Remainder Area)	0	2,524	3,389	35	34	82	0	82	30.7
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,157	59	61	147	0	147	27.1
533.00	Unincorporated El Dorado County (Remainder Area)	0	9,310	8,574	645	105	271	34	305	30.5
534.00	Unincorporated El Dorado County (Remainder Area)	0	3,782	4,952	52	53	128	0	128	29.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,931	7,811	74	91	221	0	221	26.8
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,088	6,583	64	82	200	0	200	25.5
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,390	14,148	106	165	402	0	402	25.9
538.00	Unincorporated El Dorado County (Remainder Area)	0	3,965	3,049	304	44	107	22	129	30.8
539.00	Unincorporated El Dorado County (Remainder Area)	0	12,990	1,298	2,075	6	15	166	181	72.0
540.00	Unincorporated El Dorado County (Remainder Area)	0	2,856	0	572	0	0	53	53	53.9
541.00	Unincorporated El Dorado County (Remainder Area)	0	1,050	1,118	61	18	42	6	48	21.8
542.00	Unincorporated El Dorado County (Remainder Area)	0	3,610	3,094	413	52	123	37	160	22.6
543.00	Unincorporated El Dorado County (Remainder Area)	0	10,542	2,434	1,775	49	114	107	221	47.6
544.00	Unincorporated El Dorado County (Remainder Area)	0	679	496	104	9	21	8	29	23.4
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,521	2,046	16	23	54	0	54	28.3
546.00	Unincorporated El Dorado County (Remainder Area)	0	4,811	6,428	54	61	143	0	143	33.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	523	481	10	23	46	69	57.9
548.00	Unincorporated El Dorado County (Remainder Area)	0	17,475	23,311	467	386	910	22	932	18.7
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,160	2,718	39	42	99	0	99	21.8
550.00	Unincorporated El Dorado County (Remainder Area)	0	265	347	4	7	18	0	18	14.7
551.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	2,524	783	41	105	54	159	34.0
552.00	Unincorporated El Dorado County (Remainder Area)	0	2,436	423	500	8	19	32	51	48.0
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,568	2,058	26	32	75	0	75	21.0
554.00	Unincorporated El Dorado County (Remainder Area)	0	4,047	5,248	105	83	194	4	198	20.4
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,654	2,238	24	34	80	0	80	20.6
556.00	Unincorporated El Dorado County (Remainder Area)	0	5,091	6,971	66	82	192	0	192	26.6
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,694	2,093	31	35	82	1	83	20.5
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,716	2,988	163	36	84	19	103	26.3

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559.00	Unincorporated El Dorado County (Remainder Area)	0	1,381	1,831	17	25	59	0	59	23.6
560.00	Unincorporated El Dorado County (Remainder Area)	0	1,604	1,673	100	27	63	10	73	21.9
561.00	Unincorporated El Dorado County (Remainder Area)	0	1,182	1,578	18	22	52	0	52	22.7
562.00	Unincorporated El Dorado County (Remainder Area)	0	4,016	5,900	39	62	145	0	145	27.6
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,211	3,362	17	32	71	0	71	31.3
564.00	Unincorporated El Dorado County (Remainder Area)	0	620	834	10	14	33	0	33	18.5
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,669	38	56	129	0	129	20.4
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,387	70	93	220	1	221	18.1
567.00	Unincorporated El Dorado County (Remainder Area)	0	671	816	25	18	42	2	44	15.4
568.00	Unincorporated El Dorado County (Remainder Area)	0	931	1,259	14	26	62	0	62	15.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	3,705	2,852	298	61	144	31	175	21.1
570.00	Unincorporated El Dorado County (Remainder Area)	0	4,738	2,119	775	40	92	92	184	25.7
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,371	1,843	22	33	76	0	76	18.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	1,867	1,377	262	25	61	34	95	19.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	6,504	7,840	121	89	197	2	199	32.7
574.00	Unincorporated El Dorado County (Remainder Area)	0	5,059	8,006	30	71	174	0	174	29.1
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,777	4,117	16	29	71	0	71	39.1
576.00	Unincorporated El Dorado County (Remainder Area)	0	1,093	1,543	16	19	42	1	43	25.4
577.00	Unincorporated El Dorado County (Remainder Area)	0	753	1,117	7	13	29	0	29	26.2
578.00	Unincorporated El Dorado County (Remainder Area)	0	23,468	37,261	106	370	817	0	817	28.7
579.00	Unincorporated El Dorado County (Remainder Area)	0	3,788	5,279	100	38	96	12	108	34.9
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,893	4,142	62	35	89	5	94	30.8
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,278	5,106	291	43	95	32	127	33.8
582.00	Unincorporated El Dorado County (Remainder Area)	0	1,258	1,708	16	13	34	0	34	37.2
583.00	Unincorporated El Dorado County (Remainder Area)	0	27,736	43,328	212	352	774	10	784	35.4
584.00	Unincorporated El Dorado County (Remainder Area)	0	1,736	2,097	55	18	40	3	43	40.7
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,569	14,366	78	124	273	0	273	35.1
586.00	Unincorporated El Dorado County (Remainder Area)	0	5,837	2,525	1,555	51	91	92	183	32.0
587.00	Unincorporated El Dorado County (Remainder Area)	0	2,277	3,414	17	39	99	0	99	22.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	19,726	30,121	125	323	805	0	805	24.5
589.00	Unincorporated El Dorado County (Remainder Area)	0	393	627	2	3	12	0	12	32.7
590.00	Unincorporated El Dorado County (Remainder Area)	0	830	1,145	12	18	46	0	46	18.2
591.00	Unincorporated El Dorado County (Remainder Area)	0	86	122	1	3	8	0	8	11.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	12,714	13,276	739	339	749	91	840	15.1
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,940	9,089	265	151	382	28	410	16.9
594.00	Unincorporated El Dorado County (Remainder Area)	0	16,945	24,780	182	312	790	5	795	21.3
595.00	Unincorporated El Dorado County (Remainder Area)	0	1,939	1,825	265	25	56	31	87	22.2
596.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	2,777	221	34	85	25	110	25.8
597.00	Unincorporated El Dorado County (Remainder Area)	0	11,029	4,036	1,914	106	234	278	512	21.5
598.00	Unincorporated El Dorado County (Remainder Area)	0	1,719	544	259	14	31	35	66	26.1
599.00	Unincorporated El Dorado County (Remainder Area)	0	712	969	11	17	38	0	38	18.9
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,268	11,074	1,266	205	453	130	583	19.3
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,338	1,903	4	10	22	0	22	60.9
602.00	Unincorporated El Dorado County (Remainder Area)	0	433	137	53	3	5	2	7	59.0
603.00	Unincorporated El Dorado County (Remainder Area)	0	906	729	84	11	20	2	22	42.0
604.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,776	109	17	33	3	36	39.3
605.00	Unincorporated El Dorado County (Remainder Area)	0	1,653	1,766	86	18	38	2	40	41.3
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,530	4,854	12	19	49	0	49	71.5
608.00	Unincorporated El Dorado County (Remainder Area)	0	6	0	0	1	2	0	2	2.9
609.00	Unincorporated El Dorado County (Remainder Area)	0	3,028	3,208	117	34	72	4	76	40.0
610.00	El Dorado Hills	0	38,894	185	20,450	0	0	1,745	1,745	22.3
611.00	El Dorado Hills	0	315	0	10	153	0	1	1	315.1
612.00	El Dorado Hills	0	79,244	0	44,405	0	0	3,121	3,121	25.4
613.00	Unincorporated El Dorado County (Remainder Area)	0	71	67	1	2	5	0	5	13.8
614.00	El Dorado Hills	0	5,951	7,036	115	150	383	0	383	15.6
615.00	El Dorado Hills	0	12,122	9,014	1,032	150	402	75	477	25.4
616.00	El Dorado Hills	0	1,374	1,639	25	37	94	0	94	14.7
617.00	El Dorado Hills	0	20,608	12,689	1,251	187	547	118	665	31.0
618.00	El Dorado Hills	0	3,136	0	1,248	0	0	146	146	21.5
619.00	El Dorado Hills	0	3,458	0	1,252	0	0	151	151	22.9
620.00	El Dorado Hills	0	17,790	3,464	1,776	0	0	188	188	94.6

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	14,299	18,797	223	327	957	0	957	14.9
622.00	El Dorado Hills	0	21,947	21,514	1,625	370	1,083	147	1,230	17.8
623.00	Unincorporated El Dorado County (Remainder Area)	0	393	0	173	0	0	16	16	24.5
624.00	El Dorado Hills	0	15,659	17,550	1,193	308	905	96	1,001	15.7
625.00	El Dorado Hills	0	861	0	418	0	0	40	40	21.5
626.00	Unincorporated El Dorado County (Remainder Area)	0	8,700	7,509	1,120	164	383	98	481	18.1
627.00	Unincorporated El Dorado County (Remainder Area)	0	54,214	0	11,337	0	0	897	897	60.4
628.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,446	1,742	25	37	94	0	94	15.4
633.00	Unincorporated El Dorado County (Remainder Area)	0	6,287	7,481	122	150	379	0	379	16.6
634.00	Unincorporated El Dorado County (Remainder Area)	0	6,451	7,748	122	150	379	0	379	17.0
635.00	Unincorporated El Dorado County (Remainder Area)	0	4,874	5,840	92	113	286	0	286	17.0
636.00	Unincorporated El Dorado County (Remainder Area)	0	4,366	6,094	81	120	322	0	322	13.6
637.00	Unincorporated El Dorado County (Remainder Area)	0	8,062	9,923	140	171	458	0	458	17.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,037	1,266	16	23	62	0	62	16.8
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,263	2,810	36	46	123	0	123	18.4
640.00	Unincorporated El Dorado County (Remainder Area)	0	7,666	9,534	125	176	472	0	472	16.2
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,088	2,601	33	46	123	0	123	16.9
642.00	Unincorporated El Dorado County (Remainder Area)	0	28,454	33,516	1,269	637	1,708	93	1,801	15.8
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,822	12,118	163	216	579	0	579	17.0
644.00	Unincorporated El Dorado County (Remainder Area)	0	2,922	3,676	47	76	194	0	194	15.1
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,198	24,639	949	415	1,059	51	1,110	19.1
646.00	Unincorporated El Dorado County (Remainder Area)	0	8,819	11,040	154	192	490	0	490	18.0
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,587	1,896	69	38	97	6	103	15.4
648.00	Unincorporated El Dorado County (Remainder Area)	0	1,814	2,169	46	38	97	2	99	18.3
649.00	Unincorporated El Dorado County (Remainder Area)	0	5,510	3,117	31	38	97	0	97	56.8
650.00	Outside of County	0	3,018,017	1,487,652	470,023	0	0	0	0	-
651.00	Outside of County	0	28,430	14,325	4,161	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	391,601	159,733	51,129	0	0	0	0	-
654.00	Outside of County	0	56,157	9,082	2,855	0	0	0	0	-
655.00	Outside of County	0	269,259	107,794	35,163	0	0	0	0	-
656.00	Outside of County	0	76,873	18,147	8,671	0	0	0	0	-
657.00	Outside of County	0	186,257	8,193	3,831	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	7,525	3,130	1,406	0	0	0	0	-
660.00	Outside of County	0	164,217	81,865	31,549	0	0	0	0	-
661.00	Outside of County	0	156,422	71,575	25,672	0	0	0	0	-
662.00	Outside of County	0	700,690	338,333	119,222	0	0	0	0	-
663.00	Outside of County	0	679,400	227,123	80,896	0	0	0	0	-
664.00	Outside of County	0	347,429	190,135	54,774	0	0	0	0	-
665.00	Outside of County	0	199,364	79,618	30,980	0	0	0	0	-
666.00	Outside of County	0	88,161	45,079	14,335	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	512,377	310,784	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	169,913	96,013	23,735	0	0	0	0	-
672.00	Outside of County	0	33,262	34,250	0	0	0	0	0	-
673.00	Outside of County	0	24,884	14,900	0	0	0	0	0	-
674.00	Outside of County	0	355,415	29,972	0	0	0	0	0	-

2040 No Project

VMT Summary by Jurisdiction - 2040 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	403,646	62,940	105,579	24.8	8.2	12.2	3,429	7,658	8,649	16,307	2.23
Unincorporated El Dorado County	5,042,237	3,102,953	675,594	21.2	17.1	12.0	73,092	181,914	56,413	238,327	2.49
				Threshold (85% of Unincorporated El Dorado County)	14.5	10.2					

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	5,577	1,771	819	47	99	36	135	41.3
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,283	24,630	870	592	1,338	77	1,415	16.5
3.00	Unincorporated El Dorado County (Remainder Area)	0	5,275	6,532	98	74	180	0	180	29.4
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,065	1,368	17	16	35	0	35	30.7
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,584	3,591	26	33	73	0	73	35.4
6.00	Unincorporated El Dorado County (Remainder Area)	0	13,805	15,958	505	366	847	14	861	16.0
7.00	Unincorporated El Dorado County (Remainder Area)	0	24,308	26,914	1,345	565	1,223	92	1,315	18.5
8.00	Unincorporated El Dorado County (Remainder Area)	0	11,267	575	1,969	15	38	129	167	67.6
9.00	Unincorporated El Dorado County (Remainder Area)	0	25,132	30,522	627	559	1,400	13	1,413	17.8
10.00	Outside of County	0	108,486	87,346	11,383	2,178	5,588	1,056	6,644	16.3
11.00	Outside of County	0	111,997	80,769	13,767	2,148	5,511	1,297	6,808	16.5
12.00	Outside of County	0	58,773	44,883	4,878	1,179	3,234	437	3,671	16.0
13.00	Outside of County	0	34,464	40,043	1,540	906	2,458	99	2,557	13.5
14.00	Outside of County	0	59,225	68,150	1,704	1,511	4,120	78	4,198	14.1
15.00	Outside of County	0	3,041	3,912	59	58	166	0	166	18.4
16.00	Outside of County	0	56,181	21,685	7,600	659	1,614	689	2,303	24.4
17.00	Outside of County	0	161,000	141,146	14,049	2,811	7,160	1,363	8,523	18.9
18.00	Outside of County	0	84,904	96,958	3,631	1,930	4,652	246	4,898	17.3
19.00	Outside of County	0	10,270	5,762	1,091	96	217	103	320	32.1
20.00	Outside of County	0	7,630	143	4,060	2	7	283	290	26.3
21.00	Outside of County	0	26,219	73	13,535	2	4	1,082	1,086	24.1
22.00	Outside of County	0	1,683	10	335	1	1	21	22	76.5
23.00	Outside of County	0	29,007	12,699	3,659	115	322	261	583	49.7
24.00	Outside of County	0	4,209	3,133	139	133	133	0	133	31.6
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	109,636	103,251	7,988	2,238	5,070	642	5,712	19.2
27.00	Outside of County	0	8,221	76	3,043	2	5	338	343	24.0
28.00	Outside of County	0	240,481	201,753	17,253	4,828	12,553	1,923	14,476	16.6
29.00	Outside of County	0	8,677	11,086	163	170	486	0	486	17.9
30.00	Outside of County	0	71,035	73,528	5,820	1,194	3,041	368	3,409	20.8
31.00	Outside of County	0	10,189	5,261	599	41	106	44	150	67.7
32.00	Outside of County	0	30,011	38,869	687	692	1,811	21	1,832	16.4
33.00	Outside of County	0	38,665	48,142	1,368	857	2,183	69	2,252	17.2
34.00	Outside of County	0	6,133	5,984	702	69	156	32	188	32.6
35.00	Outside of County	0	30,842	37,467	774	812	2,092	0	2,092	14.7
36.00	Outside of County	0	37,373	45,280	905	910	2,318	0	2,318	16.1
37.00	Outside of County	0	58,191	2,570	21,985	57	142	1,643	1,785	32.6
38.00	Outside of County	0	6,657	3,876	635	57	142	45	187	35.7
39.00	Outside of County	0	16,965	14,560	2,117	514	1,180	181	1,361	12.5
40.00	Outside of County	0	75,695	22,144	16,170	851	1,972	1,905	3,877	19.5
41.00	Outside of County	0	35,443	24,462	7,537	592	1,368	567	1,935	18.3
42.00	Outside of County	0	175,509	97,906	24,675	2,081	5,108	1,911	7,019	25.0
43.00	Outside of County	0	34,551	40,416	973	849	2,170	46	2,216	15.6
44.00	Outside of County	0	110,572	81,356	8,862	1,827	4,654	791	5,445	20.3
45.00	Outside of County	0	72,610	23,160	12,084	846	1,936	1,262	3,198	22.7
46.00	Outside of County	0	5,984	6,531	150	164	375	0	375	15.9
47.00	Outside of County	0	201,201	9,498	80,144	284	681	5,991	6,672	30.2
48.00	Outside of County	0	48,147	42,713	3,724	1,211	3,071	266	3,337	14.4
49.00	Outside of County	0	109,811	586	49,788	18	45	4,248	4,293	25.6
50.00	Outside of County	0	73,223	36,351	21,786	981	2,487	1,736	4,223	17.3
51.00	Outside of County	0	97,988	51,789	15,576	1,710	4,116	1,373	5,489	17.9
52.00	Outside of County	0	30,503	15,044	3,151	279	629	279	908	33.6
53.00	Outside of County	0	78,930	47,997	10,799	1,399	3,606	983	4,589	17.2
54.00	Outside of County	0	59,817	22,507	22,177	494	1,220	1,748	2,968	20.2
55.00	Outside of County	0	76,816	30,242	13,824	639	1,471	1,127	2,598	29.6
56.00	Outside of County	0	36,016	40,247	1,285	872	2,337	56	2,393	15.0
57.00	Outside of County	0	107,258	24,206	46,054	660	1,466	4,152	5,618	19.1
58.00	Outside of County	0	36,017	26,091	4,381	613	1,587	352	1,939	18.6
59.00	Outside of County	0	45,084	90	26,765	2	5	2,191	2,196	20.5
60.00	Outside of County	0	67,902	8,286	30,755	240	512	2,711	3,223	21.1
61.00	Outside of County	0	140,399	87,296	22,426	2,381	5,595	1,810	7,405	19.0
62.00	Outside of County	0	51,641	1,929	23,725	33	110	2,000	2,110	24.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	65,971	5,287	26,981	143	350	2,462	2,812	23.5
64.00	Outside of County	0	128,949	73,483	20,622	2,031	5,053	1,733	6,786	19.0
65.00	Outside of County	0	5,599	6,327	125	127	328	0	328	17.1
66.00	Outside of County	0	37,694	28,192	4,165	887	2,117	331	2,448	15.4
67.00	Outside of County	0	117,020	21,912	38,405	633	1,374	3,381	4,755	24.6
68.00	Outside of County	0	38,606	12,450	10,773	453	946	1,002	1,948	19.8
69.00	Outside of County	0	240,406	69,515	96,278	1,950	5,172	7,364	12,536	19.2
70.00	Outside of County	0	160,478	1,049	96,174	15	38	7,503	7,541	21.3
71.00	Outside of County	0	216,856	131,337	32,088	2,596	6,730	2,417	9,147	23.7
72.00	Outside of County	0	269,467	750	154,094	0	0	10,084	10,084	26.7
73.00	Outside of County	0	96,236	0	60,285	0	0	4,612	4,612	20.9
74.00	Outside of County	0	134,490	17,437	65,999	546	1,335	5,255	6,590	20.4
75.00	Outside of County	0	84,202	62,232	16,925	1,946	4,535	1,072	5,607	15.0
76.00	Outside of County	0	27,691	16,903	3,797	497	1,333	313	1,646	16.8
77.00	Outside of County	0	80,840	41,776	19,346	1,068	2,684	1,384	4,068	19.9
78.00	Outside of County	0	70,420	0	20,196	1	2	1,777	1,779	39.6
79.00	Outside of County	0	75,763	58,024	9,204	1,345	3,258	620	3,878	19.5
80.00	Outside of County	0	33,570	0	16,311	0	0	1,306	1,306	25.7
81.00	Outside of County	0	178,581	0	99,760	0	0	7,809	7,809	22.9
82.00	Outside of County	0	52,351	0	25,971	0	0	2,171	2,171	24.1
83.00	Outside of County	0	51,010	34,487	6,753	590	1,536	460	1,996	25.6
84.00	Outside of County	0	51,746	42,015	4,072	1,305	3,049	306	3,355	15.4
85.00	Outside of County	0	54,629	45,545	4,618	1,261	3,154	354	3,508	15.6
86.00	Outside of County	0	84,779	60,757	8,187	1,996	4,538	681	5,219	16.2
87.00	Outside of County	0	63,414	50,564	7,466	1,845	3,996	613	4,609	13.8
88.00	Outside of County	0	71,073	42,292	8,187	1,184	2,955	696	3,651	19.5
89.00	Outside of County	0	18,652	0	6,015	0	0	455	455	41.0
90.00	Outside of County	0	56,882	2,014	28,031	92	157	2,453	2,610	21.8
91.00	Outside of County	0	99,198	13,519	36,251	389	997	3,846	4,843	20.5
92.00	Outside of County	0	50,863	47,767	2,466	1,234	2,964	133	3,097	16.4
93.00	Outside of County	0	93,216	64,870	18,649	1,374	3,459	1,484	4,943	18.9
94.00	Outside of County	0	1,125	102	456	2	4	41	45	25.0
95.00	Outside of County	0	119,957	0	63,185	0	0	4,542	4,542	26.4
96.00	Outside of County	0	160,963	53,684	54,076	1,026	2,520	3,884	6,404	25.1
97.00	Outside of County	0	57,299	51,467	4,469	1,030	2,624	349	2,973	19.3
98.00	Outside of County	0	84,308	13,260	27,261	375	984	2,705	3,689	22.9
99.00	Outside of County	0	71,250	27,674	23,074	806	1,976	2,391	4,367	16.3
100.00	Outside of County	0	21,474	26,993	440	470	1,178	0	1,178	18.2
101.00	Outside of County	0	54,838	41,910	8,797	869	2,253	822	3,075	17.8
102.00	Outside of County	0	22,160	5,203	6,155	92	237	467	704	31.5
103.00	Outside of County	0	96,154	107,011	3,994	2,474	5,823	281	6,104	15.8
104.00	Outside of County	0	60,057	9,222	12,931	184	451	868	1,319	45.5
105.00	Outside of County	0	40,776	52,407	879	1,011	2,513	10	2,523	16.2
106.00	Outside of County	0	6,839	0	3,166	0	0	283	283	24.2
107.00	Outside of County	0	296,406	40,382	94,449	1,362	3,008	7,445	10,453	28.4
108.00	Outside of County	0	27,008	16,940	5,680	370	988	479	1,467	18.4
109.00	Outside of County	0	16,618	0	7,326	0	0	563	563	29.5
110.00	Outside of County	0	62,156	8,647	28,456	209	495	2,207	2,702	23.0
111.00	Outside of County	0	81,795	7,429	15,287	223	512	1,049	1,561	52.4
112.00	Outside of County	0	133,552	30,397	26,842	763	2,056	2,119	4,175	32.0
113.00	Outside of County	0	53,819	115	23,681	0	0	2,386	2,386	22.6
114.00	Outside of County	0	36,060	29,492	6,410	809	2,141	572	2,713	13.3
115.00	Outside of County	0	153,182	86,205	20,787	1,900	4,875	1,584	6,459	23.7
116.00	Outside of County	0	2,991	0	1,474	0	0	116	116	25.8
117.00	Outside of County	0	51,596	17,174	15,342	327	920	1,448	2,368	21.8
118.00	Outside of County	0	76,582	80,927	3,240	2,338	6,182	191	6,373	12.0
119.00	Outside of County	0	133,930	7,155	62,174	216	540	6,222	6,762	19.8
120.00	Outside of County	0	176,902	0	43,368	0	0	4,669	4,669	37.9
121.00	Outside of County	0	137,388	48,395	19,509	1,513	3,882	1,917	5,799	23.7
122.00	Outside of County	0	56,501	14,997	10,481	533	1,248	1,125	2,373	23.8
123.00	Outside of County	0	28,595	6,998	5,098	200	547	536	1,083	26.4
124.00	Outside of County	0	52,817	48,084	2,776	1,044	2,229	168	2,397	22.0

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	27,933	9,995	5,545	414	817	583	1,400	20.0
126.00	Outside of County	0	16,243	4,837	2,898	156	342	274	616	26.4
127.00	Outside of County	0	38,646	33,709	2,382	870	1,855	169	2,024	19.1
128.00	Outside of County	0	66,050	47,193	6,765	1,262	2,600	538	3,138	21.0
129.00	Outside of County	0	41,333	43,608	1,825	1,045	2,302	117	2,419	17.1
130.00	Outside of County	0	21,004	9,167	2,657	342	786	298	1,084	19.4
131.00	Outside of County	0	47,353	14,668	11,269	494	1,013	1,272	2,285	20.7
132.00	Outside of County	0	27,968	23,222	2,759	556	1,258	235	1,493	18.7
133.00	Outside of County	0	118,100	58,239	14,396	2,077	5,182	1,628	6,810	17.3
134.00	Outside of County	0	61,149	30,010	18,017	1,074	2,483	1,578	4,061	15.1
135.00	Outside of County	0	50,360	0	27,533	0	0	2,740	2,740	18.4
136.00	Outside of County	0	25,821	27,605	1,369	661	1,688	93	1,781	14.5
137.00	Outside of County	0	112,329	102,589	6,994	2,426	6,986	595	7,581	14.8
138.00	El Dorado Diamond Springs	0	21,919	6,082	4,329	264	577	297	874	25.1
139.00	El Dorado Diamond Springs	0	10,536	1,345	1,705	67	144	156	300	35.1
140.00	El Dorado Diamond Springs	0	56,900	127	10,262	10	22	811	833	68.3
141.00	Unincorporated El Dorado County (Remainder Area)	0	1,488	1,667	28	21	49	0	49	30.3
142.00	Unincorporated El Dorado County (Remainder Area)	0	6,586	6,517	171	156	347	0	347	19.0
143.00	Unincorporated El Dorado County (Remainder Area)	0	4,208	3,324	255	108	240	12	252	16.7
144.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	3,572	339	80	200	21	221	18.2
145.00	Unincorporated El Dorado County (Remainder Area)	0	742	650	25	30	70	0	70	10.6
146.00	El Dorado Diamond Springs	0	6,251	2,345	1,107	114	261	98	359	17.4
147.00	El Dorado Diamond Springs	0	3,727	3,553	131	165	378	0	378	9.8
148.00	Outside of County	0	155,420	185,969	5,362	2,264	5,302	120	5,422	28.7
149.00	Shingle Springs	0	16,644	1,750	3,538	53	149	287	436	38.2
150.00	Unincorporated El Dorado County (Remainder Area)	0	6,010	6,830	131	107	254	0	254	23.7
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,302	1,727	19	23	67	0	67	19.5
152.00	Shingle Springs	0	34,226	6,129	5,240	201	488	370	858	39.9
153.00	Unincorporated El Dorado County (Remainder Area)	0	8,548	8,130	247	290	623	0	623	13.7
154.00	Unincorporated El Dorado County (Remainder Area)	0	6,923	7,061	192	254	597	0	597	11.6
155.00	Shingle Springs	0	5,210	5,654	133	154	406	0	406	12.8
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,047	2,316	57	27	68	1	69	29.7
157.00	El Dorado Hills	0	8,646	10,861	168	273	790	0	790	10.9
158.00	Cameron Park	0	17,384	18,613	505	624	1,431	11	1,442	12.1
159.00	Cameron Park	0	15,343	14,559	1,449	446	1,082	114	1,196	12.8
160.00	Shingle Springs	0	18,392	16,609	1,167	504	1,223	70	1,293	14.2
161.00	El Dorado Hills	0	11,353	14,244	210	290	754	0	754	15.1
162.00	El Dorado Hills	0	57,372	77,615	887	1,503	4,465	0	4,465	12.8
163.00	El Dorado Hills	0	37,646	7,638	5,100	165	490	438	928	40.6
164.00	El Dorado Hills	0	61,232	0	32,391	0	0	3,124	3,124	19.6
165.00	El Dorado Hills	0	17,367	20,569	424	551	1,369	0	1,369	12.7
166.00	Outside of County	0	28,692	30,496	1,012	766	1,965	50	2,015	14.2
167.00	El Dorado Hills	0	47,835	46,337	2,359	1,520	3,531	111	3,641	13.1
168.00	El Dorado Hills	0	26,965	29,653	1,084	1,133	2,632	35	2,667	10.1
169.00	El Dorado Hills	0	118,869	5,595	25,708	208	517	2,484	3,001	39.6
170.00	El Dorado Hills	0	46,923	722	23,705	26	65	2,562	2,627	17.9
171.00	El Dorado Hills	0	16,341	16,278	1,064	441	1,081	68	1,148	14.2
172.00	El Dorado Hills	0	9,465	0	1,696	0	0	158	158	59.9
173.00	El Dorado Hills	0	46,417	0	11,158	0	0	1,140	1,140	40.7
174.00	Unincorporated El Dorado County (Remainder Area)	0	3,863	1,487	1,078	15	38	54	92	42.1
175.00	Unincorporated El Dorado County (Remainder Area)	0	2,612	630	484	10	24	22	46	57.1
176.00	Unincorporated El Dorado County (Remainder Area)	0	3,211	3,633	70	58	137	0	137	23.4
177.00	Unincorporated El Dorado County (Remainder Area)	0	11,090	8,569	1,814	147	370	130	500	22.2
178.00	Unincorporated El Dorado County (Remainder Area)	0	4,884	5,616	138	87	223	3	226	21.6
179.00	Unincorporated El Dorado County (Remainder Area)	0	737	932	12	21	55	0	55	13.5
180.00	El Dorado Hills	0	18,216	22,374	354	450	1,155	0	1,155	15.8
181.00	El Dorado Hills	0	6,992	5,404	692	120	315	61	376	18.6
182.00	Cameron Park	0	39,176	47,651	767	1,244	3,262	0	3,262	12.0
183.00	Unincorporated El Dorado County (Remainder Area)	0	11,007	11,993	270	354	832	0	832	13.2
184.00	Cameron Park	0	39,181	16,173	4,511	417	1,093	425	1,518	25.8
185.00	Cameron Park	0	3,898	4,376	86	152	349	0	349	11.2
186.00	Cameron Park	0	50,840	4,599	8,898	170	390	896	1,286	39.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
187.00	Cameron Park	0	10,759	7,112	1,208	247	566	104	670	16.0
188.00	Cameron Park	0	6,611	5,630	598	213	489	49	538	12.3
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,454	3,141	40	36	100	0	100	24.4
190.00	Unincorporated El Dorado County (Remainder Area)	0	10,416	13,307	182	255	712	0	712	14.6
191.00	El Dorado Hills	0	1,437	1,825	24	39	109	0	109	13.2
192.00	El Dorado Hills	0	866	1,089	14	25	69	0	69	12.5
193.00	El Dorado Hills	0	14,290	5,231	3,682	156	406	361	768	18.6
194.00	El Dorado Hills	0	15,034	19,467	268	439	1,297	0	1,297	11.6
195.00	El Dorado Hills	0	9,027	469	2,007	10	26	176	203	44.5
196.00	Outside of County	0	52,397	59,847	1,724	1,148	3,198	97	3,295	15.9
197.00	El Dorado Hills	0	3,186	3,921	56	85	225	0	225	14.2
198.00	El Dorado Hills	0	69,020	39,116	6,079	887	2,476	623	3,099	22.3
199.00	El Dorado Hills	0	11,332	2,877	1,620	62	173	143	316	35.9
200.00	El Dorado Hills	0	6,394	305	1,223	7	19	121	140	45.8
201.00	El Dorado Hills	0	20,651	6,786	2,765	150	443	269	712	29.0
202.00	El Dorado Hills	0	37,475	35,429	2,120	762	2,127	169	2,296	16.3
203.00	El Dorado Hills	0	51,666	65,660	1,162	1,300	3,762	43	3,805	13.6
204.00	El Dorado Hills	0	17,153	16,147	639	362	1,048	48	1,096	15.6
205.00	El Dorado Hills	0	504	0	244	0	0	30	30	16.8
206.00	El Dorado Hills	0	1,622	2,074	28	51	148	0	148	11.0
207.00	El Dorado Hills	0	12,923	16,554	220	304	880	0	880	14.7
208.00	Unincorporated El Dorado County (Remainder Area)	0	325	424	5	9	26	0	26	12.5
209.00	El Dorado Hills	0	11,559	4,446	1,414	88	254	118	372	31.1
210.00	El Dorado Hills	0	6,340	8,147	109	162	479	0	479	13.2
211.00	Unincorporated El Dorado County (Remainder Area)	0	135	178	2	4	11	0	11	11.9
212.00	El Dorado Hills	0	2,394	3,100	38	53	153	0	153	15.6
213.00	Unincorporated El Dorado County (Remainder Area)	0	9,180	11,783	154	193	534	0	534	17.2
214.00	Unincorporated El Dorado County (Remainder Area)	0	2,328	3,353	31	31	76	0	76	30.8
215.00	El Dorado Hills	0	6,798	8,623	121	148	413	0	413	16.5
216.00	Unincorporated El Dorado County (Remainder Area)	0	1,749	2,460	26	23	56	0	56	31.2
217.00	Unincorporated El Dorado County (Remainder Area)	0	587	759	9	11	31	0	31	19.1
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,510	1,891	26	28	78	0	78	19.3
219.00	Unincorporated El Dorado County (Remainder Area)	0	3,903	4,955	67	69	191	0	191	20.4
220.00	Unincorporated El Dorado County (Remainder Area)	0	471	632	6	9	25	0	25	18.9
221.00	El Dorado Hills	0	37,326	48,591	581	999	2,596	0	2,596	14.4
222.00	Cameron Park	0	2,165	1,463	427	34	90	58	148	14.6
223.00	Cameron Park	0	5,504	7,081	79	174	461	0	461	11.9
224.00	Unincorporated El Dorado County (Remainder Area)	0	8,565	7,314	500	144	382	37	419	20.5
225.00	Unincorporated El Dorado County (Remainder Area)	0	23,221	10,893	2,967	147	424	277	702	33.1
226.00	Cameron Park	0	27,514	26,959	1,255	550	1,591	118	1,709	16.1
227.00	Cameron Park	0	8,651	10,994	207	281	689	10	699	12.4
228.00	Cameron Park	0	20,463	24,983	508	724	1,775	25	1,800	11.4
229.00	El Dorado Hills	0	41,462	34,471	2,382	793	2,061	237	2,298	18.0
230.00	El Dorado Hills	0	22,862	27,784	343	557	1,655	0	1,655	13.8
231.00	Unincorporated El Dorado County (Remainder Area)	0	4,978	6,651	73	134	388	0	388	12.8
232.00	Unincorporated El Dorado County (Remainder Area)	0	4,539	5,862	73	87	241	0	241	18.9
233.00	Cameron Park	0	8,471	3,660	748	116	266	100	366	23.1
234.00	Cameron Park	0	55,511	33,426	5,094	1,085	2,488	670	3,158	17.6
235.00	Cameron Park	0	42,235	54,330	640	1,322	3,580	2	3,582	11.8
236.00	Cameron Park	0	14,727	19,307	262	473	1,281	9	1,290	11.4
237.00	Cameron Park	0	2,247	2,615	46	78	179	0	179	12.6
238.00	Cameron Park	0	39,546	15,069	5,313	415	1,018	527	1,545	25.6
239.00	Cameron Park	0	2,338	3,345	35	86	228	0	228	10.3
240.00	Unincorporated El Dorado County (Remainder Area)	0	6,561	8,295	109	137	363	0	363	18.1
241.00	Cameron Park	0	14,966	7,538	1,277	181	480	151	631	23.7
242.00	Cameron Park	0	698	904	9	24	64	0	64	11.0
243.00	Cameron Park	0	2,017	2,585	32	61	162	1	163	12.4
244.00	Unincorporated El Dorado County (Remainder Area)	0	3,006	3,713	57	51	128	0	128	23.5
245.00	Unincorporated El Dorado County (Remainder Area)	0	772	999	11	10	30	0	30	25.7
246.00	Unincorporated El Dorado County (Remainder Area)	0	3,912	5,184	56	63	189	0	189	20.7
247.00	Unincorporated El Dorado County (Remainder Area)	0	13,625	14,348	352	296	636	0	636	21.4
248.00	Unincorporated El Dorado County (Remainder Area)	0	13,273	10,381	942	182	431	39	470	28.2

VMT Summary by Jurisdiction - 2040 Baseline Scenario

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249.00	Unincorporated El Dorado County (Remainder Area)	0	3,358	1,860	529	26	56	25	81	41.5
250.00	Unincorporated El Dorado County (Remainder Area)	0	2,870	3,279	60	53	124	0	124	23.1
251.00	Unincorporated El Dorado County (Remainder Area)	0	5,625	6,213	136	139	363	0	363	15.5
252.00	Unincorporated El Dorado County (Remainder Area)	0	24,724	28,716	576	666	1,756	0	1,756	14.1
253.00	Unincorporated El Dorado County (Remainder Area)	0	7,485	8,850	159	149	410	0	410	18.3
254.00	Unincorporated El Dorado County (Remainder Area)	0	5,268	5,898	122	119	311	0	311	16.9
255.00	Cameron Park	0	64,954	0	14,885	0	0	1,405	1,405	46.2
256.00	Cameron Park	0	44,527	1,998	10,490	72	175	872	1,047	42.5
257.00	Shingle Springs	0	62,227	15,348	14,601	511	1,335	1,312	2,647	23.5
258.00	Unincorporated El Dorado County (Remainder Area)	0	2,120	2,523	40	36	99	0	99	21.4
259.00	Unincorporated El Dorado County (Remainder Area)	0	2,603	3,101	52	50	132	0	132	19.8
260.00	Shingle Springs	0	27,087	140	5,665	5	15	441	456	59.4
261.00	Shingle Springs	0	27,150	3,584	4,859	121	333	388	721	37.7
262.00	Shingle Springs	0	40,675	5,472	6,539	203	530	514	1,044	39.0
263.00	Shingle Springs	0	10,047	3,816	1,485	121	333	119	452	22.2
264.00	Shingle Springs	0	7,892	3,089	1,056	97	267	82	349	22.6
265.00	Unincorporated El Dorado County (Remainder Area)	0	1,956	2,209	43	44	116	0	116	16.9
266.00	Unincorporated El Dorado County (Remainder Area)	0	6,118	1,664	666	41	88	33	121	50.5
267.00	Unincorporated El Dorado County (Remainder Area)	0	8,695	10,038	219	240	633	0	633	13.7
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,023	3,094	171	72	190	10	200	15.1
269.00	Unincorporated El Dorado County (Remainder Area)	0	13,580	9,332	1,442	217	558	81	639	21.2
270.00	Unincorporated El Dorado County (Remainder Area)	0	6,207	2,667	678	54	135	39	174	35.7
271.00	Unincorporated El Dorado County (Remainder Area)	0	9,840	9,935	735	172	442	50	492	20.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	9,795	6,482	806	145	407	55	462	21.2
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,439	8,885	376	138	400	22	422	17.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	21,558	18,879	1,567	411	1,153	122	1,275	16.9
275.00	Unincorporated El Dorado County (Remainder Area)	0	14,758	17,112	337	379	971	0	971	15.2
276.00	Cameron Park	0	28,055	18,733	2,074	535	1,312	179	1,491	18.8
277.00	Cameron Park	0	4,944	5,796	100	176	427	0	427	11.6
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,749	5,977	217	100	265	10	275	20.9
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,919	3,719	49	55	146	0	146	20.0
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,438	1,677	31	37	103	0	103	14.0
281.00	Unincorporated El Dorado County (Remainder Area)	0	4,881	4,202	427	85	238	28	266	18.3
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,390	1,617	30	39	109	0	109	12.7
283.00	Shingle Springs	0	15,332	3,049	2,225	0	0	197	197	77.8
284.00	Shingle Springs	0	4,299	1,009	657	36	87	53	140	30.6
285.00	Unincorporated El Dorado County (Remainder Area)	0	14,061	2,737	2,962	53	154	233	387	36.3
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,660	2,071	30	36	101	0	101	16.4
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,395	1,685	27	34	87	0	87	16.0
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,174	2,688	40	50	140	0	140	15.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	320	421	5	8	23	0	23	13.8
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,045	2,614	35	44	128	0	128	16.0
291.00	Unincorporated El Dorado County (Remainder Area)	0	12,413	15,726	238	254	647	0	647	19.2
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,243	5,672	64	72	209	0	209	20.3
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,294	1,289	36	41	90	0	90	14.4
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,477	4,692	122	129	321	0	321	14.0
295.00	Unincorporated El Dorado County (Remainder Area)	0	62,264	4,926	22,499	110	282	1,540	1,822	34.2
296.00	El Dorado Diamond Springs	0	52,128	6,599	9,732	188	496	729	1,225	42.6
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,262	2,673	62	79	208	0	208	10.9
298.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	3,081	71	79	208	0	208	13.6
299.00	Unincorporated El Dorado County (Remainder Area)	0	4,994	5,716	112	114	293	0	293	17.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,728	1,917	41	45	116	0	116	14.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	624	549	41	20	44	3	47	13.4
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,867	2,605	208	89	194	10	204	18.9
303.00	El Dorado Diamond Springs	0	4,188	2,682	443	106	228	28	255	16.4
304.00	El Dorado Diamond Springs	0	8,292	283	2,652	12	26	269	296	28.1
305.00	El Dorado Diamond Springs	0	10,709	0	4,971	1	2	536	539	19.9
306.00	El Dorado Diamond Springs	0	7,895	3,170	1,348	128	275	110	386	20.5
307.00	El Dorado Diamond Springs	0	2,949	2,816	92	112	257	0	257	11.5
308.00	El Dorado Diamond Springs	0	239	245	6	12	28	0	28	8.7
309.00	El Dorado Diamond Springs	0	808	720	26	34	74	0	74	10.9
310.00	El Dorado Diamond Springs	0	13,788	638	2,504	29	66	220	286	48.2

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
311.00	El Dorado Diamond Springs	0	3,547	1,728	438	75	164	33	197	18.0
312.00	El Dorado Diamond Springs	0	9,915	6,814	976	310	711	71	782	12.7
313.00	El Dorado Diamond Springs	0	23,526	3,405	7,013	71	178	534	712	33.0
314.00	El Dorado Diamond Springs	0	10,542	2,505	1,454	100	249	103	352	30.0
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	674	642	22	31	68	0	68	10.0
317.00	El Dorado Diamond Springs	0	140	126	4	8	17	0	17	8.0
318.00	Unincorporated El Dorado County (Remainder Area)	0	8,111	4,743	732	182	452	41	493	16.4
319.00	El Dorado Diamond Springs	0	1,396	1,289	45	57	143	0	143	9.8
320.00	Unincorporated El Dorado County (Remainder Area)	0	4,885	1,581	810	19	48	61	109	44.7
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,212	6,158	137	116	295	2	297	17.5
322.00	Unincorporated El Dorado County (Remainder Area)	0	10,673	10,591	570	242	623	26	649	16.5
323.00	Unincorporated El Dorado County (Remainder Area)	0	8,272	3,756	1,838	67	172	139	311	26.6
324.00	Unincorporated El Dorado County (Remainder Area)	0	7,025	3,631	697	73	183	39	222	31.7
325.00	Unincorporated El Dorado County (Remainder Area)	0	717	836	16	20	51	0	51	14.1
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,083	2,471	49	57	145	0	145	14.4
327.00	Placerville	0	3,209	3,505	82	84	210	0	210	15.3
328.00	Unincorporated El Dorado County (Remainder Area)	0	696	793	16	19	48	0	48	14.6
329.00	Placerville	0	4,820	4,856	140	156	360	0	360	13.4
330.00	Unincorporated El Dorado County (Remainder Area)	0	3,484	3,705	94	109	273	0	273	12.8
331.00	Unincorporated El Dorado County (Remainder Area)	0	6,120	6,990	140	130	325	0	325	18.8
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,432	1,528	38	47	105	0	105	13.6
333.00	Unincorporated El Dorado County (Remainder Area)	0	3,938	4,510	87	91	225	0	225	17.5
334.00	Unincorporated El Dorado County (Remainder Area)	0	1,640	1,002	256	26	58	18	76	21.5
335.00	Unincorporated El Dorado County (Remainder Area)	0	2,801	3,021	73	76	163	0	163	17.2
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,045	1,118	26	30	66	0	66	15.8
337.00	Unincorporated El Dorado County (Remainder Area)	0	10,198	6,044	1,758	124	304	128	432	23.6
338.00	Unincorporated El Dorado County (Remainder Area)	0	13,834	15,709	397	350	900	11	911	15.2
339.00	Unincorporated El Dorado County (Remainder Area)	0	9,273	12,029	145	224	508	0	508	18.3
340.00	Unincorporated El Dorado County (Remainder Area)	0	8,019	5,276	510	95	202	30	232	34.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,630	1,556	172	34	75	16	91	18.0
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,375	2,733	49	48	123	0	123	19.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	4,958	5,767	91	78	177	0	177	28.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	5,861	6,947	107	92	208	0	208	28.1
345.00	Unincorporated El Dorado County (Remainder Area)	0	2,005	2,121	39	34	77	0	77	26.1
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,267	1,247	28	23	51	0	51	24.8
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,642	3,127	49	42	108	0	108	24.5
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,505	2,468	59	48	107	0	107	23.5
349.00	Unincorporated El Dorado County (Remainder Area)	0	8,160	4,922	577	94	193	34	227	35.9
350.00	Unincorporated El Dorado County (Remainder Area)	0	987	1,147	17	20	45	0	45	21.8
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,469	1,853	23	31	70	0	70	20.9
352.00	Unincorporated El Dorado County (Remainder Area)	0	2,102	2,701	31	38	86	0	86	24.4
353.00	Unincorporated El Dorado County (Remainder Area)	0	10,678	10,292	512	200	453	43	496	21.5
354.00	Unincorporated El Dorado County (Remainder Area)	0	7,011	4,699	456	68	154	43	197	35.6
355.00	Placerville	1	27,205	5,137	4,963	257	594	387	981	27.7
356.00	Placerville	1	2,711	2,556	91	109	235	0	235	11.6
357.00	Unincorporated El Dorado County (Remainder Area)	0	8,042	4,243	728	133	294	42	336	23.9
358.00	Placerville	0	10,297	3,363	1,630	128	283	123	406	25.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	3,540	3,686	94	105	247	0	247	14.3
360.00	Unincorporated El Dorado County (Remainder Area)	0	4,180	4,550	98	97	228	0	228	18.3
361.00	Placerville	1	26,989	10,058	4,607	570	1,189	370	1,558	17.3
362.00	Placerville	1	46,670	3,856	7,966	194	457	616	1,073	43.5
363.00	Unincorporated El Dorado County (Remainder Area)	0	416	428	12	19	48	0	48	8.7
364.00	Placerville	0	4,535	3,718	415	173	439	28	466	9.7
365.00	El Dorado Diamond Springs	0	24,235	9,333	2,984	541	1,147	223	1,370	17.7
366.00	El Dorado Diamond Springs	0	10,584	1,561	1,636	108	232	146	378	28.0
367.00	El Dorado Diamond Springs	0	7,168	0	3,549	0	0	398	398	18.0
368.00	El Dorado Diamond Springs	0	4,905	1,336	823	68	157	81	238	20.6
369.00	El Dorado Diamond Springs	0	14,199	8,875	1,412	485	1,088	114	1,202	11.8
370.00	El Dorado Diamond Springs	0	6,930	78	2,913	0	0	317	317	21.9
371.00	El Dorado Diamond Springs	0	2,152	2,077	61	69	155	0	155	13.9
372.00	El Dorado Diamond Springs	0	28,663	14,060	3,147	559	1,254	296	1,550	18.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
373.00	El Dorado Diamond Springs	0	556	494	18	27	62	0	62	9.0
374.00	El Dorado Diamond Springs	0	1,046	276	116	14	32	10	42	24.8
375.00	El Dorado Diamond Springs	0	361	329	11	15	34	0	34	10.5
376.00	El Dorado Diamond Springs	0	1,492	726	219	34	78	17	95	15.7
377.00	El Dorado Diamond Springs	0	723	318	170	14	32	16	48	15.0
378.00	El Dorado Diamond Springs	0	547	518	16	27	62	0	62	8.8
379.00	El Dorado Diamond Springs	0	941	874	29	48	111	0	111	8.5
380.00	El Dorado Diamond Springs	0	196	186	6	12	28	0	28	7.1
381.00	El Dorado Diamond Springs	0	115	111	3	7	16	0	16	7.2
382.00	El Dorado Diamond Springs	0	222	184	8	11	25	0	25	8.7
383.00	Unincorporated El Dorado County (Remainder Area)	0	2,357	2,392	64	80	179	0	179	13.1
384.00	El Dorado Diamond Springs	0	4,504	4,469	123	174	390	0	390	11.5
385.00	El Dorado Diamond Springs	0	14,274	13,898	540	600	1,346	14	1,360	10.5
386.00	El Dorado Diamond Springs	0	2,238	2,243	60	90	202	0	202	11.1
387.00	El Dorado Diamond Springs	0	3,281	744	471	36	81	44	124	26.4
388.00	El Dorado Diamond Springs	0	5,459	0	2,606	0	0	278	278	19.6
389.00	El Dorado Diamond Springs	0	5,903	19	2,148	2	5	240	245	24.1
390.00	El Dorado Diamond Springs	0	7,345	4,866	735	311	670	54	724	10.1
391.00	El Dorado Diamond Springs	0	6,028	144	968	11	24	92	116	52.0
392.00	El Dorado Diamond Springs	0	1,014	475	89	28	60	5	66	15.5
393.00	El Dorado Diamond Springs	0	25,639	4,760	3,793	281	645	288	932	27.5
394.00	El Dorado Diamond Springs	0	6,140	111	2,051	8	18	168	186	33.0
395.00	Placerville	1	80,005	1,459	29,650	98	206	2,613	2,819	28.4
396.00	El Dorado Diamond Springs	0	30,664	0	5,532	0	0	425	425	72.2
397.00	El Dorado Diamond Springs	0	1,453	905	120	50	109	7	116	12.5
398.00	El Dorado Diamond Springs	0	1,155	266	144	14	32	11	43	26.7
399.00	El Dorado Diamond Springs	0	959	834	33	43	99	0	99	9.7
400.00	El Dorado Diamond Springs	0	7,340	210	1,237	16	35	97	132	55.8
401.00	Placerville	0	26,880	942	4,574	57	121	337	458	58.7
402.00	El Dorado Diamond Springs	0	4,675	2,567	1,032	137	344	103	447	10.5
403.00	El Dorado Diamond Springs	0	31,547	2,590	12,686	124	267	906	1,174	26.9
404.00	El Dorado Diamond Springs	0	1,727	303	333	19	44	32	76	22.8
405.00	El Dorado Diamond Springs	0	1,669	148	251	9	21	21	41	40.2
406.00	El Dorado Diamond Springs	0	26,221	386	4,385	24	55	339	395	66.5
407.00	El Dorado Diamond Springs	0	16,201	554	3,223	39	84	285	369	43.9
408.00	El Dorado Diamond Springs	0	5,521	0	2,366	1	2	279	281	19.6
409.00	Placerville	0	37,977	3,517	8,041	162	410	610	1,019	37.3
410.00	El Dorado Diamond Springs	0	40,316	14,331	5,587	602	1,418	423	1,840	21.9
411.00	Placerville	1	55,481	5,299	11,419	335	793	982	1,775	31.3
412.00	Unincorporated El Dorado County (Remainder Area)	0	3,441	3,309	105	114	271	0	271	12.7
413.00	Placerville	0	4,918	4,594	170	199	472	1	473	10.4
414.00	El Dorado Diamond Springs	0	20,103	92	5,325	7	15	561	576	34.9
415.00	Unincorporated El Dorado County (Remainder Area)	0	437	320	42	18	38	4	42	10.3
416.00	El Dorado Diamond Springs	0	267	129	54	9	19	7	26	10.1
417.00	Placerville	1	22,868	912	4,798	55	124	424	548	41.8
418.00	Placerville	1	5,504	0	1,376	0	0	130	130	42.3
419.00	Placerville	1	6,891	0	1,208	0	0	112	112	61.6
420.00	Placerville	1	5,272	970	1,322	56	132	117	249	21.2
421.00	Placerville	1	2,553	1,466	406	81	191	28	219	11.7
422.00	Placerville	1	67,392	5,183	31,184	303	714	2,392	3,106	21.7
423.00	Unincorporated El Dorado County (Remainder Area)	0	448	391	26	21	49	1	50	9.0
424.00	Placerville	0	25,597	5,377	4,430	252	582	351	934	27.4
425.00	Placerville	0	67,430	28,934	8,086	1,390	3,090	730	3,820	17.7
426.00	Placerville	0	706	726	18	32	80	0	80	8.8
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,813	4,038	100	102	255	0	255	15.0
428.00	Unincorporated El Dorado County (Remainder Area)	0	551	584	14	22	55	0	55	10.0
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,193	1,395	35	35	87	0	87	13.8
430.00	Unincorporated El Dorado County (Remainder Area)	0	3,098	2,008	547	59	146	44	190	16.3
431.00	Placerville	1	13,596	511	2,247	28	59	167	226	60.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,626	10,622	3,103	363	900	241	1,140	13.7
433.00	Placerville	1	16,918	10,023	2,268	678	1,398	175	1,572	10.8
434.00	Placerville	1	828	640	30	44	95	0	95	8.7

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
435.00	Placerville	1	1,290	671	231	47	100	27	127	10.2
436.00	Unincorporated El Dorado County (Remainder Area)	0	1,146	1,171	49	32	79	2	81	14.2
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,360	5,919	131	147	371	0	371	14.5
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,837	4,262	505	143	303	32	335	17.4
439.00	Unincorporated El Dorado County (Remainder Area)	0	9,608	4,644	1,525	169	359	90	449	21.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	5,939	863	1,570	31	66	111	177	33.6
441.00	Placerville	1	399	393	11	15	35	0	35	11.4
442.00	Placerville	1	13,545	9,872	968	350	882	56	939	14.4
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,946	1,882	56	59	125	0	125	15.5
444.00	Unincorporated El Dorado County (Remainder Area)	0	273	179	17	8	19	1	20	13.7
445.00	Placerville	0	839	789	56	26	65	3	68	12.3
446.00	Placerville	1	4,234	763	694	28	65	53	119	35.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	8,302	3,155	1,566	81	199	116	314	26.4
448.00	Placerville	0	1,804	2,034	52	64	161	0	161	11.2
449.00	Unincorporated El Dorado County (Remainder Area)	0	465	476	12	14	30	0	30	15.5
450.00	Unincorporated El Dorado County (Remainder Area)	0	2,337	2,203	75	84	180	0	180	13.0
451.00	Unincorporated El Dorado County (Remainder Area)	0	894	868	26	27	58	0	58	15.4
452.00	Placerville	0	6,873	3,649	920	150	321	66	387	17.7
453.00	Placerville	1	3,297	3,171	139	182	391	0	391	8.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	543	478	19	28	59	0	59	9.2
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,531	2,663	67	73	181	0	181	14.0
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,775	1,772	50	51	109	0	109	16.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	3,115	3,005	249	68	153	13	166	18.7
458.00	Placerville	0	11,360	1,923	1,822	71	157	130	287	39.6
459.00	Placerville	0	726	702	21	28	62	0	62	11.7
460.00	Unincorporated El Dorado County (Remainder Area)	0	823	792	23	22	47	0	47	17.4
461.00	Unincorporated El Dorado County (Remainder Area)	0	113	128	2	6	13	0	13	8.6
462.00	Unincorporated El Dorado County (Remainder Area)	0	2,602	1,238	402	31	67	24	91	28.7
463.00	Unincorporated El Dorado County (Remainder Area)	0	3,727	5,338	47	89	195	0	195	19.1
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,789	3,416	47	55	129	0	129	21.7
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,725	5,388	32	65	163	0	163	22.8
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,077	3,406	113	65	143	7	150	20.6
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,487	3,499	29	49	107	0	107	23.2
468.00	Unincorporated El Dorado County (Remainder Area)	0	5,812	6,924	96	128	263	0	263	22.1
469.00	Unincorporated El Dorado County (Remainder Area)	0	3,786	5,171	42	70	156	0	156	24.3
470.00	Unincorporated El Dorado County (Remainder Area)	0	1,666	2,153	23	33	72	0	72	23.0
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,208	1,595	17	26	57	0	57	21.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,206	1,631	17	26	57	0	57	21.1
473.00	Unincorporated El Dorado County (Remainder Area)	0	1,175	676	222	13	33	25	58	20.4
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,758	2,037	35	42	95	0	95	18.5
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,837	2,192	33	42	95	0	95	19.3
476.00	Unincorporated El Dorado County (Remainder Area)	0	4,009	899	523	16	41	34	75	53.4
477.00	Unincorporated El Dorado County (Remainder Area)	0	1,570	2,180	20	31	78	0	78	20.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,224	1,437	24	30	66	0	66	18.4
479.00	Unincorporated El Dorado County (Remainder Area)	0	5,057	3,301	420	62	156	29	185	27.4
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,693	2,440	28	31	68	1	69	24.5
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,353	1,928	18	24	53	0	53	25.5
482.00	Unincorporated El Dorado County (Remainder Area)	0	6,439	8,493	87	102	226	0	226	28.5
483.00	Unincorporated El Dorado County (Remainder Area)	0	9,535	4,695	1,031	132	285	76	361	26.4
484.00	Unincorporated El Dorado County (Remainder Area)	0	8,636	4,829	1,170	104	267	118	384	22.5
485.00	Unincorporated El Dorado County (Remainder Area)	0	2,234	3,011	30	40	103	0	103	21.8
486.00	Unincorporated El Dorado County (Remainder Area)	0	5,286	7,069	75	110	249	0	249	21.3
487.00	Unincorporated El Dorado County (Remainder Area)	0	18,701	8,250	3,045	228	504	184	688	27.2
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,732	7,282	104	125	283	0	283	20.3
489.00	Unincorporated El Dorado County (Remainder Area)	0	7,396	6,626	406	157	355	24	379	19.5
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,515	1,805	31	35	86	0	86	17.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,401	8,785	160	181	444	0	444	16.7
492.00	Unincorporated El Dorado County (Remainder Area)	0	8,812	3,449	1,038	76	188	72	259	34.0
493.00	Unincorporated El Dorado County (Remainder Area)	0	9,816	3,608	1,461	79	195	101	296	33.1
494.00	Unincorporated El Dorado County (Remainder Area)	0	6,332	2,995	757	71	174	55	229	27.7
495.00	Unincorporated El Dorado County (Remainder Area)	0	642	749	14	17	42	0	42	15.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,203	4,221	709	94	232	52	284	25.3

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
497.00	Unincorporated El Dorado County (Remainder Area)	0	9,446	4,990	1,004	109	263	75	338	27.9
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,590	4,033	175	78	176	13	189	19.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,503	1,832	30	38	93	0	93	16.1
500.00	Unincorporated El Dorado County (Remainder Area)	0	5,290	1,094	1,164	11	24	97	121	43.6
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,232	817	553	22	49	58	107	20.8
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,254	8,928	139	147	349	0	349	20.8
503.00	Unincorporated El Dorado County (Remainder Area)	0	5,070	10	842	1	2	56	58	87.1
504.00	Unincorporated El Dorado County (Remainder Area)	0	13,658	5,066	1,629	140	313	103	416	32.8
505.00	Unincorporated El Dorado County (Remainder Area)	0	80	95	1	3	7	0	7	11.9
506.00	Unincorporated El Dorado County (Remainder Area)	0	995	1,020	35	28	64	1	65	15.4
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,130	2,501	48	61	145	0	145	14.7
508.00	Unincorporated El Dorado County (Remainder Area)	0	4,878	2,870	1,160	85	184	114	298	16.4
509.00	Unincorporated El Dorado County (Remainder Area)	0	2,068	407	651	12	27	77	104	19.9
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,520	2,933	223	92	200	15	215	16.3
511.00	Unincorporated El Dorado County (Remainder Area)	0	1,993	1,574	132	46	109	9	118	16.8
512.00	Unincorporated El Dorado County (Remainder Area)	0	1,909	2,176	43	45	107	0	107	17.9
513.00	Unincorporated El Dorado County (Remainder Area)	0	8,016	10,349	170	178	456	7	463	17.3
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,462	43,123	374	714	1,830	0	1,830	17.2
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,165	4,073	54	78	188	0	188	16.8
516.00	Unincorporated El Dorado County (Remainder Area)	0	7,404	10,018	101	162	391	0	391	18.9
517.00	Unincorporated El Dorado County (Remainder Area)	0	23,471	18,996	1,723	489	1,085	139	1,224	19.2
518.00	Unincorporated El Dorado County (Remainder Area)	0	13,133	12,367	799	325	745	53	799	16.4
519.00	Unincorporated El Dorado County (Remainder Area)	0	7,739	6,213	744	162	371	60	432	17.9
520.00	Unincorporated El Dorado County (Remainder Area)	0	13,964	12,163	1,168	296	678	99	778	18.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	15,913	9,284	1,662	309	686	167	853	18.6
522.00	Unincorporated El Dorado County (Remainder Area)	0	4,836	5,854	167	96	236	9	245	19.7
523.00	Unincorporated El Dorado County (Remainder Area)	0	24,551	10,064	3,120	302	698	272	970	25.3
524.00	Unincorporated El Dorado County (Remainder Area)	0	19,198	8,822	2,532	214	495	207	702	27.3
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,565	5,782	59	97	233	0	233	19.6
526.00	Unincorporated El Dorado County (Remainder Area)	0	3,206	4,031	56	55	142	0	142	22.6
527.00	Unincorporated El Dorado County (Remainder Area)	0	8,811	6,976	838	186	447	71	517	17.0
528.00	Unincorporated El Dorado County (Remainder Area)	0	51,708	63,975	888	1,061	2,556	51	2,607	19.8
529.00	Unincorporated El Dorado County (Remainder Area)	0	1,259	1,222	124	19	46	8	54	23.2
530.00	Unincorporated El Dorado County (Remainder Area)	0	13,300	17,586	223	226	551	0	551	24.2
531.00	Unincorporated El Dorado County (Remainder Area)	0	3,817	5,010	62	59	144	0	144	26.6
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,640	4,570	64	64	156	0	156	23.4
533.00	Unincorporated El Dorado County (Remainder Area)	0	11,659	9,338	984	151	367	53	420	27.8
534.00	Unincorporated El Dorado County (Remainder Area)	0	4,280	5,431	71	69	168	0	168	25.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,371	6,745	84	95	245	0	245	21.9
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,499	6,973	82	106	273	0	273	20.1
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,964	14,381	138	208	536	0	536	20.4
538.00	Unincorporated El Dorado County (Remainder Area)	0	15,597	7,381	1,837	159	382	137	519	30.0
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,553	1,922	1,903	11	27	142	169	80.2
540.00	Unincorporated El Dorado County (Remainder Area)	0	9,633	0	1,686	0	0	132	132	72.8
541.00	Unincorporated El Dorado County (Remainder Area)	0	2,568	840	299	18	43	24	67	38.2
542.00	Unincorporated El Dorado County (Remainder Area)	0	6,153	2,205	963	55	130	76	206	29.9
543.00	Unincorporated El Dorado County (Remainder Area)	0	32,304	1,673	6,353	50	118	368	486	66.4
544.00	Unincorporated El Dorado County (Remainder Area)	0	2,506	2,672	63	58	137	0	137	18.2
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,758	20	27	64	0	64	22.2
546.00	Unincorporated El Dorado County (Remainder Area)	0	7,991	10,043	115	131	310	0	310	25.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,914	533	758	13	31	64	95	51.8
548.00	Unincorporated El Dorado County (Remainder Area)	0	15,338	17,576	597	405	960	27	987	15.5
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,386	2,760	64	54	128	1	129	18.5
550.00	Unincorporated El Dorado County (Remainder Area)	0	6,354	1,696	996	40	100	62	162	39.1
551.00	Unincorporated El Dorado County (Remainder Area)	0	8,972	1,812	1,357	46	115	87	202	44.4
552.00	Unincorporated El Dorado County (Remainder Area)	0	1,059	454	106	11	26	6	32	33.1
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,477	1,741	32	35	83	0	83	17.8
554.00	Unincorporated El Dorado County (Remainder Area)	0	6,782	7,946	189	185	438	5	443	15.3
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,558	1,761	31	39	92	0	92	16.9
556.00	Unincorporated El Dorado County (Remainder Area)	0	4,503	5,469	80	89	211	0	211	21.4
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,811	1,549	214	34	81	20	101	18.0
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,005	2,503	27	40	96	0	96	20.9

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,256	1,459	22	28	67	0	67	18.7
560.00	Unincorporated El Dorado County (Remainder Area)	0	5,897	1,198	1,745	28	66	172	238	24.7
561.00	Unincorporated El Dorado County (Remainder Area)	0	901	1,024	19	23	54	0	54	16.6
562.00	Unincorporated El Dorado County (Remainder Area)	0	3,761	4,664	55	73	175	0	175	21.4
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,095	2,703	24	40	90	0	90	23.2
564.00	Unincorporated El Dorado County (Remainder Area)	0	1,035	1,214	24	27	62	0	62	16.6
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,174	2,329	52	69	143	0	143	15.2
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,929	3,986	140	112	264	5	269	14.6
567.00	Unincorporated El Dorado County (Remainder Area)	0	3,065	694	580	29	60	50	110	27.9
568.00	Unincorporated El Dorado County (Remainder Area)	0	2,929	754	551	26	61	47	108	27.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	6,998	1,996	1,081	72	169	96	265	26.4
570.00	Unincorporated El Dorado County (Remainder Area)	0	8,639	1,184	1,851	53	109	169	278	31.1
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,099	1,130	28	38	79	0	79	14.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	4,739	1,232	962	39	90	89	178	26.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	7,934	9,693	125	126	284	0	284	27.9
574.00	Unincorporated El Dorado County (Remainder Area)	0	4,398	5,592	54	88	204	1	205	21.5
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,797	4,029	21	37	86	0	86	32.7
576.00	Unincorporated El Dorado County (Remainder Area)	0	2,740	856	322	19	43	33	76	36.1
577.00	Unincorporated El Dorado County (Remainder Area)	0	527	635	8	14	32	0	32	16.7
578.00	Unincorporated El Dorado County (Remainder Area)	0	25,033	38,183	125	451	1,016	0	1,016	24.6
579.00	Unincorporated El Dorado County (Remainder Area)	0	2,783	4,024	21	41	96	0	96	29.0
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,454	3,330	26	42	98	0	98	24.9
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,765	7,005	39	66	146	0	146	32.6
582.00	Unincorporated El Dorado County (Remainder Area)	0	13,111	992	1,606	15	37	65	102	128.6
583.00	Unincorporated El Dorado County (Remainder Area)	0	30,927	46,535	291	446	987	15	1,002	30.9
584.00	Unincorporated El Dorado County (Remainder Area)	0	2,103	2,052	106	22	47	6	53	39.8
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,922	14,081	94	148	327	0	327	30.3
586.00	Unincorporated El Dorado County (Remainder Area)	0	3,736	2,865	258	56	105	10	115	32.5
587.00	Unincorporated El Dorado County (Remainder Area)	0	1,958	2,756	23	48	116	0	116	16.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	15,965	22,673	145	348	892	0	892	17.9
589.00	Unincorporated El Dorado County (Remainder Area)	0	239	290	6	8	16	0	16	14.9
590.00	Unincorporated El Dorado County (Remainder Area)	0	819	1,034	14	23	55	0	55	14.9
591.00	Unincorporated El Dorado County (Remainder Area)	0	67	87	1	3	7	0	7	9.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	14,394	9,407	1,281	361	801	146	947	15.2
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,848	5,889	529	155	370	56	426	16.1
594.00	Unincorporated El Dorado County (Remainder Area)	0	11,293	15,053	163	316	754	0	754	15.0
595.00	Unincorporated El Dorado County (Remainder Area)	0	4,038	2,673	251	46	104	27	131	30.8
596.00	Unincorporated El Dorado County (Remainder Area)	0	5,258	3,064	493	59	151	48	199	26.4
597.00	Unincorporated El Dorado County (Remainder Area)	0	12,298	3,074	1,753	122	271	214	485	25.3
598.00	Unincorporated El Dorado County (Remainder Area)	0	8,757	386	1,441	15	33	166	200	43.9
599.00	Unincorporated El Dorado County (Remainder Area)	0	622	765	12	18	40	0	40	15.6
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,409	8,190	1,044	217	481	94	575	19.8
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	1,856	5	11	24	0	24	54.9
602.00	Unincorporated El Dorado County (Remainder Area)	0	1,851	116	235	3	6	9	15	126.6
603.00	Unincorporated El Dorado County (Remainder Area)	0	3,571	470	923	12	23	32	55	65.5
604.00	Unincorporated El Dorado County (Remainder Area)	0	3,261	634	449	17	31	13	44	74.4
605.00	Unincorporated El Dorado County (Remainder Area)	0	2,835	914	807	21	46	29	75	38.0
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,216	4,498	12	19	47	0	47	68.8
608.00	Unincorporated El Dorado County (Remainder Area)	0	30	41	0	1	2	0	2	13.8
609.00	Unincorporated El Dorado County (Remainder Area)	0	9,749	1,528	1,526	37	80	61	141	69.0
610.00	El Dorado Hills	0	60,722	137	28,105	0	0	2,725	2,725	22.3
611.00	El Dorado Hills	0	59,180	34,796	8,774	1,023	2,614	672	3,286	18.0
612.00	El Dorado Hills	0	128,483	1,046	62,207	0	0	5,778	5,778	22.2
613.00	Unincorporated El Dorado County (Remainder Area)	0	119	102	18	4	10	3	13	9.3
614.00	El Dorado Hills	0	6,284	7,424	137	211	550	0	550	11.4
615.00	El Dorado Hills	0	10,543	8,776	725	211	550	60	609	17.3
616.00	El Dorado Hills	0	1,568	1,862	33	53	138	0	138	11.4
617.00	El Dorado Hills	0	13,981	9,746	904	187	553	89	642	21.8
618.00	El Dorado Hills	0	4,693	0	2,128	0	0	265	265	17.7
619.00	El Dorado Hills	0	3,485	0	566	0	0	60	60	58.1
620.00	El Dorado Hills	0	17,466	3,715	1,583	0	0	178	178	98.1

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	12,558	16,345	218	326	963	0	963	13.0
622.00	El Dorado Hills	0	19,304	18,056	1,112	370	1,094	90	1,184	16.3
623.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
624.00	El Dorado Hills	0	15,290	14,513	684	309	918	54	972	15.7
625.00	El Dorado Hills	0	182	0	105	0	0	12	12	15.2
626.00	Unincorporated El Dorado County (Remainder Area)	0	42,077	4,866	6,506	164	386	554	939	44.8
627.00	Unincorporated El Dorado County (Remainder Area)	0	59,517	0	11,017	0	0	966	966	61.6
628.00	Unincorporated El Dorado County (Remainder Area)	0	19,745	23,460	458	515	1,322	0	1,322	14.9
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,660	2,025	33	53	138	0	138	12.0
633.00	Unincorporated El Dorado County (Remainder Area)	0	7,027	8,434	150	211	550	0	550	12.8
634.00	Unincorporated El Dorado County (Remainder Area)	0	7,361	8,924	151	212	552	0	552	13.3
635.00	Unincorporated El Dorado County (Remainder Area)	0	3,605	4,362	72	106	276	0	276	13.1
636.00	Unincorporated El Dorado County (Remainder Area)	0	6,042	8,294	136	212	556	0	556	10.9
637.00	Unincorporated El Dorado County (Remainder Area)	0	9,445	11,545	188	265	695	0	695	13.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,274	1,595	22	36	94	0	94	13.5
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,735	3,343	52	72	189	0	189	14.5
640.00	Unincorporated El Dorado County (Remainder Area)	0	9,539	11,832	183	272	713	0	713	13.4
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,759	3,405	52	72	189	0	189	14.6
642.00	Unincorporated El Dorado County (Remainder Area)	0	36,495	38,459	1,582	926	2,421	96	2,517	14.5
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,281	11,512	180	257	672	0	672	13.8
644.00	Unincorporated El Dorado County (Remainder Area)	0	3,071	3,879	54	90	238	0	238	12.9
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,188	24,962	914	495	1,311	56	1,367	15.5
646.00	Unincorporated El Dorado County (Remainder Area)	0	7,088	8,875	124	180	477	0	477	14.9
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,499	1,883	26	45	119	0	119	12.6
648.00	Unincorporated El Dorado County (Remainder Area)	0	3,880	2,218	512	45	119	42	161	24.1
649.00	Unincorporated El Dorado County (Remainder Area)	0	4,695	2,830	29	45	119	0	119	39.4
650.00	Outside of County	0	2,924,327	1,494,977	488,244	0	0	0	0	-
651.00	Outside of County	0	29,889	17,048	4,074	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	418,098	187,954	51,242	0	0	0	0	-
654.00	Outside of County	0	41,830	9,395	2,400	0	0	0	0	-
655.00	Outside of County	0	352,832	120,373	33,664	0	0	0	0	-
656.00	Outside of County	0	56,354	18,723	6,997	0	0	0	0	-
657.00	Outside of County	0	196,519	9,096	3,547	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	5,729	3,013	928	0	0	0	0	-
660.00	Outside of County	0	181,521	102,048	33,425	0	0	0	0	-
661.00	Outside of County	0	148,492	79,165	24,191	0	0	0	0	-
662.00	Outside of County	0	710,514	374,713	120,676	0	0	0	0	-
663.00	Outside of County	0	733,804	259,751	80,292	0	0	0	0	-
664.00	Outside of County	0	451,825	247,011	65,947	0	0	0	0	-
665.00	Outside of County	0	221,136	97,356	35,746	0	0	0	0	-
666.00	Outside of County	0	102,261	56,553	17,165	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	535,637	361,820	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	203,230	110,554	30,430	0	0	0	0	-
672.00	Outside of County	0	38,760	38,854	0	0	0	0	0	-
673.00	Outside of County	0	33,691	16,694	0	0	0	0	0	-
674.00	Outside of County	0	405,139	27,678	0	0	0	0	0	-

VMT Summary by Jurisdiction - 2018 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	296,846	69,992	89,498	20.9	10.6	11.7	2,914	6,581	7,639	14,220	2.26
Unincorporated El Dorado County	3,706,740	3,105,525	427,564	21.8	22.7	12.9	55,436	136,955	33,076	170,031	2.47
630	7,832	8,544	203	9.3	10.1	#DIV/0!	381	847	0	847	2.22
				Threshold	19.3						

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	4,166	2,625	327	46	75	16	91	46.0
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,175	32,167	464	525	1,185	34	1,219	19.0
3.00	Unincorporated El Dorado County (Remainder Area)	0	2,950	3,748	42	34	88	0	88	33.6
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,537	1,542	52	16	34	2	36	43.0
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,870	4,053	27	33	73	0	73	39.6
6.00	Unincorporated El Dorado County (Remainder Area)	0	12,361	15,911	354	270	646	9	655	18.9
7.00	Unincorporated El Dorado County (Remainder Area)	0	25,937	33,665	994	516	1,119	71	1,190	21.8
8.00	Unincorporated El Dorado County (Remainder Area)	0	2,720	794	751	14	36	60	96	28.3
9.00	Unincorporated El Dorado County (Remainder Area)	0	28,526	33,472	1,709	482	1,240	117	1,357	21.0
10.00	Outside of County	0	0	0	0	0	0	0	0	-
11.00	Outside of County	0	0	0	0	0	0	0	0	-
12.00	Outside of County	0	39,557	31,070	1,879	663	1,741	96	1,837	21.5
13.00	Outside of County	0	31,202	35,912	687	775	1,995	0	1,995	15.6
14.00	Outside of County	0	64,341	72,216	1,553	1,502	4,068	32	4,100	15.7
15.00	Outside of County	0	498	525	10	10	23	0	23	22.1
16.00	Outside of County	0	56,488	8,982	7,537	149	378	434	812	69.6
17.00	Outside of County	0	0	0	0	0	0	0	0	-
18.00	Outside of County	0	1,557	620	67	41	116	0	116	13.4
19.00	Outside of County	0	0	0	0	0	0	0	0	-
20.00	Outside of County	0	219	18	118	1	1	5	6	36.6
21.00	Outside of County	0	5,225	50	2,540	1	2	112	114	45.8
22.00	Outside of County	0	2,226	269	579	2	6	23	29	76.7
23.00	Outside of County	0	58,622	23,692	6,309	101	273	244	517	113.5
24.00	Outside of County	0	48	30	1	1	1	0	1	47.7
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	0	0	0	0	0	0	0	-
27.00	Outside of County	0	1,313	265	500	2	6	22	28	46.9
28.00	Outside of County	0	12,538	14,745	378	123	332	6	338	37.1
29.00	Outside of County	0	7,851	9,177	243	72	192	5	197	39.9
30.00	Outside of County	0	6,058	0	3,208	0	0	133	133	45.5
31.00	Outside of County	0	5,562	4,124	1,046	44	94	45	139	40.0
32.00	Outside of County	0	24,963	6,856	622	676	1,526	0	1,526	16.4
33.00	Outside of County	0	0	0	0	0	0	0	0	-
34.00	Outside of County	0	8,759	9,505	587	75	191	16	207	42.4
35.00	Outside of County	0	0	0	0	0	0	0	0	-
36.00	Outside of County	0	0	0	0	0	0	0	0	-
37.00	Outside of County	0	5,077	0	2,683	0	0	178	178	28.5
38.00	Outside of County	0	0	0	0	0	0	0	0	-
39.00	Outside of County	0	24,409	22,415	3,316	666	1,569	227	1,796	13.6
40.00	Outside of County	0	114,027	26,280	18,898	916	2,079	1,839	3,918	29.1
41.00	Outside of County	0	30,903	26,562	3,968	544	1,271	203	1,474	21.0
42.00	Outside of County	0	0	0	0	0	0	0	0	-
43.00	Outside of County	0	53,546	63,323	1,211	828	2,045	0	2,045	26.2
44.00	Outside of County	0	79,515	76,843	3,283	1,069	2,614	95	2,709	29.3
45.00	Outside of County	0	100,974	24,084	14,614	906	2,057	1,357	3,414	29.6
46.00	Outside of County	0	0	0	0	0	0	0	0	-
47.00	Outside of County	0	100,903	0	42,767	0	0	2,398	2,398	42.1
48.00	Outside of County	0	72,021	71,910	3,399	1,203	3,068	121	3,189	22.6
49.00	Outside of County	0	152,877	0	78,281	0	0	4,642	4,642	32.9
50.00	Outside of County	0	120,751	85,355	19,328	1,025	2,430	826	3,256	37.1
51.00	Outside of County	0	125,778	68,968	18,107	1,768	4,253	1,237	5,490	22.9
52.00	Outside of County	0	45,557	25,284	4,462	297	667	240	907	50.2
53.00	Outside of County	0	114,364	87,605	8,475	1,335	3,452	377	3,829	29.9
54.00	Outside of County	0	92,757	36,191	38,638	476	1,153	1,827	2,980	31.1
55.00	Outside of County	0	83,197	38,439	12,495	675	1,583	800	2,383	34.9
56.00	Outside of County	0	34,951	40,059	997	820	1,933	4	1,937	18.0
57.00	Outside of County	0	162,345	0	113,472	0	0	7,375	7,375	22.0
58.00	Outside of County	0	43,828	24,407	6,807	465	1,160	388	1,548	28.3
59.00	Outside of County	0	424	111	173	2	4	9	13	32.6
60.00	Outside of County	0	205,947	17,439	103,299	238	478	4,236	4,714	43.7
61.00	Outside of County	0	273,229	191,705	22,350	2,205	5,227	797	6,024	45.4
62.00	Outside of County	0	55,259	318	26,741	4	8	1,150	1,158	47.7
63.00	Outside of County	0	114,397	18,488	51,583	340	756	3,083	3,839	29.8
64.00	Outside of County	0	79,847	60,542	11,474	865	2,156	560	2,716	29.4
65.00	Outside of County	0	10,454	11,583	218	136	338	0	338	30.9
66.00	Outside of County	0	62,386	50,971	4,294	826	1,950	172	2,122	29.4
67.00	Outside of County	0	10,434	0	2,800	0	0	178	178	58.6
68.00	Outside of County	0	55,236	32,773	11,805	616	1,314	679	1,993	27.7
69.00	Outside of County	0	144,045	90,878	38,324	1,588	4,122	2,320	6,442	22.4
70.00	Outside of County	0	210,261	803	126,756	0	0	6,956	6,956	30.2
71.00	Outside of County	0	107,476	110,943	4,894	1,231	3,088	121	3,209	33.5
72.00	Outside of County	0	254,150	362	133,950	0	0	5,133	5,133	49.5
73.00	Outside of County	0	122,244	0	80,137	0	0	5,627	5,627	21.7
74.00	Outside of County	0	176,414	22,019	81,675	435	1,022	4,728	5,750	30.7
75.00	Outside of County	0	106,845	77,617	27,254	1,936	4,401	1,866	6,267	17.0

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
76.00	Outside of County	0	42,197	23,716	5,010	508	1,352	297	1,649	25.6
77.00	Outside of County	0	159,336	78,382	33,960	1,155	2,810	1,659	4,469	35.7
78.00	Outside of County	0	88,917	0	23,853	0	0	1,567	1,567	56.7
79.00	Outside of County	0	972	0	0	0	0	20	20	48.6
80.00	Outside of County	0	50,703	0	24,019	0	0	1,410	1,410	36.0
81.00	Outside of County	0	160,995	0	83,600	0	0	4,951	4,951	32.5
82.00	Outside of County	0	56,242	0	29,992	0	0	1,787	1,787	31.5
83.00	Outside of County	0	0	0	0	0	0	0	0	-
84.00	Outside of County	0	64,953	48,646	6,578	1,226	2,817	405	3,222	20.2
85.00	Outside of County	0	71,860	60,400	4,725	1,295	3,246	253	3,499	20.5
86.00	Outside of County	0	111,525	74,857	11,412	1,968	4,487	754	5,241	21.3
87.00	Outside of County	0	103,011	66,720	12,944	2,114	4,344	800	5,144	20.0
88.00	Outside of County	0	86,708	47,979	12,034	1,099	2,679	762	3,441	25.2
89.00	Outside of County	0	11,271	0	4,692	0	0	293	293	38.5
90.00	Outside of County	0	53,443	0	10,929	0	0	592	592	90.3
91.00	Outside of County	0	123,374	16,289	50,240	383	961	4,100	5,061	24.4
92.00	Outside of County	0	60,116	56,666	3,294	1,139	2,709	141	2,850	21.1
93.00	Outside of County	0	0	0	0	0	0	0	0	-
94.00	Outside of County	0	432	480	9	6	15	0	15	28.8
95.00	Outside of County	0	933	0	443	0	0	27	27	34.6
96.00	Outside of County	0	343	0	175	0	0	12	12	28.6
97.00	Outside of County	0	110	103	2	2	4	0	4	27.5
98.00	Outside of County	0	76,362	353	27,351	10	25	2,289	2,314	33.0
99.00	Outside of County	0	49,979	27,128	11,910	791	1,944	958	2,902	17.2
100.00	Outside of County	0	6,022	7,038	129	84	203	0	203	29.7
101.00	Outside of County	0	12,116	0	6,071	0	0	320	320	37.9
102.00	Outside of County	0	6,006	5,244	1,003	51	153	53	206	29.2
103.00	Outside of County	0	58,981	68,339	1,392	910	2,200	0	2,200	26.8
104.00	Outside of County	0	0	0	0	0	0	0	0	-
105.00	Outside of County	0	0	0	0	0	0	0	0	-
106.00	Outside of County	0	2,872	0	1,452	0	0	70	70	41.0
107.00	Outside of County	0	85,509	0	45,750	0	0	3,135	3,135	27.3
108.00	Outside of County	0	438	0	203	0	0	15	15	29.2
109.00	Outside of County	0	18,947	0	4,266	0	0	238	238	79.6
110.00	Outside of County	0	63,919	8,697	29,033	205	426	1,610	2,036	31.4
111.00	Outside of County	0	136,473	12,304	25,039	350	728	1,151	1,879	72.6
112.00	Outside of County	0	195,323	38,200	41,925	747	1,946	2,117	4,063	48.1
113.00	Outside of County	0	91,651	0	47,411	0	0	4,022	4,022	22.8
114.00	Outside of County	0	40,947	30,305	7,771	770	1,950	660	2,610	15.7
115.00	Outside of County	0	0	0	0	0	0	0	0	-
116.00	Outside of County	0	0	0	0	0	0	0	0	-
117.00	Outside of County	0	87,037	32,789	23,806	401	1,031	1,492	2,523	34.5
118.00	Outside of County	0	89,831	82,262	3,773	2,313	5,898	187	6,085	14.8
119.00	Outside of County	0	170,437	7,875	75,248	214	522	6,545	7,067	24.1
120.00	Outside of County	0	204,281	0	58,715	0	0	4,131	4,131	49.5
121.00	Outside of County	0	167,320	57,282	22,438	1,642	4,261	1,724	5,985	28.0
122.00	Outside of County	0	67,418	20,201	12,462	619	1,530	1,071	2,601	25.9
123.00	Outside of County	0	53,068	7,523	10,754	200	529	855	1,384	38.3
124.00	Outside of County	0	81,216	55,211	5,578	1,240	2,628	328	2,956	27.5
125.00	Outside of County	0	60,250	10,925	9,301	389	801	781	1,582	38.1
126.00	Outside of County	0	15,766	4,406	1,787	136	279	129	408	38.6
127.00	Outside of County	0	38,604	34,442	2,025	800	1,693	117	1,810	21.3
128.00	Outside of County	0	85,988	40,348	11,057	999	2,062	767	2,829	30.4
129.00	Outside of County	0	42,845	46,721	819	994	2,246	0	2,246	19.1
130.00	Outside of County	0	31,619	10,039	4,055	369	740	416	1,156	27.3
131.00	Outside of County	0	75,719	20,681	13,598	607	1,234	1,278	2,512	30.1
132.00	Outside of County	0	34,016	20,648	3,981	407	894	260	1,154	29.5
133.00	Outside of County	0	133,279	63,740	14,736	2,087	5,211	1,475	6,686	19.9
134.00	Outside of County	0	70,518	32,161	18,485	1,075	2,460	1,492	3,952	17.8
135.00	Outside of County	0	43,651	0	23,802	0	0	2,114	2,114	20.6
136.00	Outside of County	0	31,832	28,600	1,650	669	1,669	82	1,751	18.2
137.00	Outside of County	0	139,035	104,371	9,388	2,349	6,735	673	7,408	18.8
138.00	El Dorado Diamond Springs	0	5,541	5,386	426	161	367	25	392	14.1
139.00	El Dorado Diamond Springs	0	3,959	1,788	651	62	135	55	190	20.8
140.00	El Dorado Diamond Springs	0	24,045	268	4,960	10	27	383	410	58.6
141.00	Unincorporated El Dorado County (Remainder Area)	0	2,084	1,977	80	21	49	2	51	41.0
142.00	Unincorporated El Dorado County (Remainder Area)	0	7,385	8,041	176	157	353	0	353	20.9
143.00	Unincorporated El Dorado County (Remainder Area)	0	3,601	3,775	131	93	209	4	213	16.9
144.00	Unincorporated El Dorado County (Remainder Area)	0	3,902	4,025	289	74	186	19	205	19.0
145.00	Unincorporated El Dorado County (Remainder Area)	0	804	845	22	30	69	0	69	11.7
146.00	El Dorado Diamond Springs	0	3,784	1,802	617	64	145	51	196	19.3
147.00	El Dorado Diamond Springs	0	4,301	4,592	133	159	359	0	359	12.0
148.00	Outside of County	0	189,288	257,284	6,816	2,250	5,293	137	5,430	34.9
149.00	Shingle Springs	0	6,891	1,700	1,464	37	98	112	210	32.8
150.00	Unincorporated El Dorado County (Remainder Area)	0	7,736	8,499	226	109	260	3	263	29.4

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151.00	Unincorporated El Dorado County (Remainder Area)	0	1,458	2,010	20	23	67	0	67	21.7
152.00	Shingle Springs	0	9,938	6,156	1,453	122	315	99	414	24.0
153.00	Unincorporated El Dorado County (Remainder Area)	0	6,439	6,695	215	178	388	5	393	16.4
154.00	Unincorporated El Dorado County (Remainder Area)	0	3,341	3,262	235	84	196	16	212	15.8
155.00	Shingle Springs	0	2,688	3,155	57	62	161	0	161	16.6
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,333	2,762	39	27	67	0	67	34.7
157.00	El Dorado Hills	0	11,334	14,582	189	274	807	0	807	14.0
158.00	Cameron Park	0	22,049	24,490	1,061	598	1,373	72	1,445	15.3
159.00	Cameron Park	0	12,633	16,235	239	340	878	1	879	14.4
160.00	Shingle Springs	0	7,856	9,574	164	194	501	0	501	15.7
161.00	El Dorado Hills	0	6,108	7,831	93	105	283	0	283	21.6
162.00	El Dorado Hills	0	71,555	99,144	984	1,503	4,414	0	4,414	16.2
163.00	El Dorado Hills	0	350	364	39	7	21	4	25	14.3
164.00	El Dorado Hills	0	27,844	0	14,459	0	0	1,232	1,232	22.6
165.00	El Dorado Hills	0	16,412	19,748	375	373	997	0	997	16.5
166.00	Outside of County	0	41,597	42,319	1,381	749	1,892	49	1,941	21.4
167.00	El Dorado Hills	0	50,454	52,569	2,149	1,297	2,904	55	2,959	17.0
168.00	El Dorado Hills	0	30,639	36,326	951	1,125	2,519	9	2,528	12.1
169.00	El Dorado Hills	0	103,276	155	21,372	0	0	1,688	1,688	61.2
170.00	El Dorado Hills	0	27,612	0	15,362	0	0	1,357	1,357	20.3
171.00	El Dorado Hills	0	14,284	12,802	761	441	790	20	810	17.6
172.00	El Dorado Hills	0	8,232	0	1,981	0	0	168	168	49.0
173.00	El Dorado Hills	0	29,784	0	6,431	0	0	547	547	54.4
174.00	Unincorporated El Dorado County (Remainder Area)	0	2,221	1,543	250	15	37	11	48	45.9
175.00	Unincorporated El Dorado County (Remainder Area)	0	957	879	97	11	26	5	31	30.7
176.00	Unincorporated El Dorado County (Remainder Area)	0	2,052	2,328	41	29	69	0	69	29.7
177.00	Unincorporated El Dorado County (Remainder Area)	0	828	703	119	10	25	7	32	26.0
178.00	Unincorporated El Dorado County (Remainder Area)	0	2,087	2,423	40	30	77	0	77	27.0
179.00	Unincorporated El Dorado County (Remainder Area)	0	10	17	0	1	3	0	3	3.7
180.00	El Dorado Hills	0	3,245	3,927	54	58	149	0	149	21.7
181.00	El Dorado Hills	0	1,419	8	646	1	3	58	61	23.4
182.00	Cameron Park	0	51,586	67,846	794	1,186	3,202	0	3,202	16.1
183.00	Unincorporated El Dorado County (Remainder Area)	0	6,533	7,659	127	152	355	0	355	18.4
184.00	Cameron Park	0	28,794	20,519	3,330	357	964	300	1,264	22.8
185.00	Cameron Park	0	5,408	6,647	94	149	342	0	342	15.8
186.00	Cameron Park	0	648	102	236	3	7	28	35	18.6
187.00	Cameron Park	0	10,288	9,804	1,024	239	549	85	634	16.2
188.00	Cameron Park	0	7,328	7,051	803	188	432	69	501	14.6
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,894	3,688	44	37	104	0	104	27.9
190.00	Unincorporated El Dorado County (Remainder Area)	0	11,317	14,858	175	237	663	0	663	17.1
191.00	El Dorado Hills	0	823	1,100	11	19	53	0	53	15.5
192.00	El Dorado Hills	0	1,092	1,444	15	25	70	0	70	15.7
193.00	El Dorado Hills	0	8,915	4,379	2,586	100	253	246	499	17.9
194.00	El Dorado Hills	0	18,219	23,720	283	439	1,285	0	1,285	14.2
195.00	El Dorado Hills	0	1,611	534	185	10	26	14	40	40.8
196.00	Outside of County	0	46,107	51,403	1,517	923	2,503	82	2,585	17.8
197.00	El Dorado Hills	0	3,967	4,971	65	86	219	0	219	18.1
198.00	El Dorado Hills	0	58,704	47,097	4,612	887	2,482	453	2,935	20.0
199.00	El Dorado Hills	0	11,114	3,698	1,549	62	173	120	293	37.9
200.00	El Dorado Hills	0	3,342	334	744	7	18	67	85	39.4
201.00	El Dorado Hills	0	13,491	8,477	2,770	150	439	301	740	18.2
202.00	El Dorado Hills	0	41,912	41,630	2,365	737	2,062	199	2,261	18.5
203.00	El Dorado Hills	0	52,551	66,701	1,849	1,043	3,061	139	3,200	16.4
204.00	El Dorado Hills	0	19,398	20,408	604	362	1,067	41	1,108	17.5
205.00	El Dorado Hills	0	628	0	289	0	0	30	30	20.9
206.00	El Dorado Hills	0	2,154	2,779	30	52	153	0	153	14.1
207.00	El Dorado Hills	0	15,041	19,912	231	296	869	0	869	17.3
208.00	Unincorporated El Dorado County (Remainder Area)	0	412	559	5	9	26	0	26	15.6
209.00	El Dorado Hills	0	2,997	3,556	173	55	161	14	175	17.1
210.00	El Dorado Hills	0	5,752	7,580	87	125	366	0	366	15.7
211.00	Unincorporated El Dorado County (Remainder Area)	0	167	231	2	4	11	0	11	15.0
212.00	El Dorado Hills	0	1,872	2,524	25	35	103	0	103	18.2
213.00	Unincorporated El Dorado County (Remainder Area)	0	6,818	8,998	101	116	323	0	323	21.1
214.00	Unincorporated El Dorado County (Remainder Area)	0	688	924	10	8	19	0	19	35.6
215.00	El Dorado Hills	0	6,139	8,033	96	113	316	0	316	19.4
216.00	Unincorporated El Dorado County (Remainder Area)	0	400	521	5	5	12	0	12	33.1
217.00	Unincorporated El Dorado County (Remainder Area)	0	739	957	10	11	31	0	31	24.0
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,724	2,237	25	28	78	0	78	22.0
219.00	Unincorporated El Dorado County (Remainder Area)	0	4,458	2,398	1,006	28	78	77	155	28.8
220.00	Unincorporated El Dorado County (Remainder Area)	0	581	763	8	9	25	0	25	23.2
221.00	El Dorado Hills	0	43,251	59,086	589	876	2,359	0	2,359	18.3
222.00	Cameron Park	0	2,702	1,424	257	26	71	26	97	28.0
223.00	Cameron Park	0	4,073	5,524	52	103	279	0	279	14.6
224.00	Unincorporated El Dorado County (Remainder Area)	0	5,455	6,396	349	95	258	29	287	19.0
225.00	Unincorporated El Dorado County (Remainder Area)	0	11,267	7,673	981	92	270	79	349	32.3

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
226.00	Cameron Park	0	10,024	8,754	772	131	384	76	460	21.8
227.00	Cameron Park	0	182	177	13	5	12	2	14	12.9
228.00	Cameron Park	0	23,424	31,138	510	705	1,703	20	1,723	13.6
229.00	El Dorado Hills	0	406	557	4	9	24	0	24	16.8
230.00	El Dorado Hills	0	595	814	6	12	35	0	35	16.9
231.00	Unincorporated El Dorado County (Remainder Area)	0	1,020	332	240	5	15	28	43	23.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	2,110	2,823	28	33	92	0	92	23.0
233.00	Cameron Park	0	6,653	3,846	769	92	211	101	312	21.3
234.00	Cameron Park	0	47,163	41,559	4,553	1,004	2,306	587	2,893	16.3
235.00	Cameron Park	0	33,875	44,796	480	861	2,214	0	2,214	15.3
236.00	Cameron Park	0	17,956	24,314	299	468	1,204	9	1,213	14.8
237.00	Cameron Park	0	2,848	3,555	47	75	172	0	172	16.5
238.00	Cameron Park	0	15,153	13,703	2,021	280	676	199	875	17.3
239.00	Cameron Park	0	1,950	1,617	135	32	87	16	103	19.0
240.00	Unincorporated El Dorado County (Remainder Area)	0	7,280	9,725	107	127	345	0	345	21.1
241.00	Cameron Park	0	6,840	9,110	106	164	445	2	447	15.3
242.00	Cameron Park	0	805	1,102	9	22	60	0	60	13.5
243.00	Cameron Park	0	2,408	2,931	120	52	141	13	154	15.6
244.00	Unincorporated El Dorado County (Remainder Area)	0	1,394	1,807	23	22	57	0	57	24.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	840	1,065	11	10	29	0	29	29.0
246.00	Unincorporated El Dorado County (Remainder Area)	0	4,465	6,071	59	63	182	0	182	24.5
247.00	Unincorporated El Dorado County (Remainder Area)	0	14,649	16,841	349	296	646	0	646	22.7
248.00	Unincorporated El Dorado County (Remainder Area)	0	10,776	13,133	226	185	441	0	441	24.4
249.00	Unincorporated El Dorado County (Remainder Area)	0	1,933	2,105	39	27	59	0	59	32.8
250.00	Unincorporated El Dorado County (Remainder Area)	0	3,242	3,878	63	53	123	0	123	26.3
251.00	Unincorporated El Dorado County (Remainder Area)	0	4,466	5,231	91	88	224	0	224	20.0
252.00	Unincorporated El Dorado County (Remainder Area)	0	20,267	25,005	421	434	1,130	0	1,130	17.9
253.00	Unincorporated El Dorado County (Remainder Area)	0	8,666	10,848	166	147	403	0	403	21.5
254.00	Unincorporated El Dorado County (Remainder Area)	0	6,290	7,427	128	116	295	0	295	21.3
255.00	Cameron Park	0	17,030	0	5,089	0	0	426	426	40.0
256.00	Cameron Park	0	46,450	1,918	13,816	47	121	1,042	1,163	39.9
257.00	Shingle Springs	0	30,255	6,784	11,172	153	389	960	1,349	22.4
258.00	Unincorporated El Dorado County (Remainder Area)	0	1,492	1,760	51	21	58	2	60	25.1
259.00	Unincorporated El Dorado County (Remainder Area)	0	1,827	2,275	31	30	78	0	78	23.4
260.00	Shingle Springs	0	5,679	58	1,814	2	4	146	150	37.8
261.00	Shingle Springs	0	15,350	4,187	3,621	92	252	282	534	28.7
262.00	Shingle Springs	0	12,903	4,881	3,010	121	308	238	546	23.7
263.00	Shingle Springs	0	6,152	5,016	533	108	296	35	331	18.6
264.00	Shingle Springs	0	4,768	2,299	627	50	137	45	182	26.2
265.00	Unincorporated El Dorado County (Remainder Area)	0	2,413	2,977	44	45	117	0	117	20.6
266.00	Unincorporated El Dorado County (Remainder Area)	0	2,367	2,189	116	42	92	4	96	24.7
267.00	Unincorporated El Dorado County (Remainder Area)	0	5,503	6,922	126	129	336	0	336	16.4
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,283	3,779	132	69	180	6	186	17.7
269.00	Unincorporated El Dorado County (Remainder Area)	0	9,368	11,029	227	204	516	1	517	18.1
270.00	Unincorporated El Dorado County (Remainder Area)	0	2,477	3,229	42	44	113	0	113	21.9
271.00	Unincorporated El Dorado County (Remainder Area)	0	8,104	10,082	199	150	379	5	384	21.1
272.00	Unincorporated El Dorado County (Remainder Area)	0	6,804	7,766	363	131	347	23	370	18.4
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,914	10,200	255	134	391	12	403	19.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	15,456	13,876	1,333	233	618	99	717	21.6
275.00	Unincorporated El Dorado County (Remainder Area)	0	15,523	18,344	457	321	828	13	841	18.5
276.00	Cameron Park	0	9,011	10,845	268	224	541	12	553	16.3
277.00	Cameron Park	0	6,266	7,941	106	161	416	0	416	15.1
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,238	6,824	85	91	247	0	247	21.2
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,686	3,518	42	45	122	0	122	22.0
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,780	2,204	33	37	98	0	98	18.1
281.00	Unincorporated El Dorado County (Remainder Area)	0	3,870	3,577	542	59	156	36	192	20.1
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,773	2,174	33	39	103	0	103	17.2
283.00	Shingle Springs	0	16,094	3,774	2,072	0	0	161	161	100.0
284.00	Shingle Springs	0	1,623	1,093	304	25	65	25	90	18.1
285.00	Unincorporated El Dorado County (Remainder Area)	0	5,119	1,486	884	12	26	66	92	55.4
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,779	2,322	29	36	95	0	95	18.6
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,719	2,183	29	34	88	0	88	19.6
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,634	3,329	46	51	135	0	135	19.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	360	515	4	8	23	0	23	15.4
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,418	3,233	37	44	129	0	129	18.8
291.00	Unincorporated El Dorado County (Remainder Area)	0	9,937	12,966	182	188	463	0	463	21.4
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,557	6,305	65	72	210	0	210	21.7
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,230	1,281	32	34	77	0	77	15.9
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,031	4,677	94	97	247	0	247	16.3
295.00	Unincorporated El Dorado County (Remainder Area)	0	148,483	5,038	26,624	110	284	1,491	1,775	83.7
296.00	El Dorado Diamond Springs	0	9,620	6,696	853	117	305	56	361	26.7
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,435	3,154	57	70	182	0	182	13.4
298.00	Unincorporated El Dorado County (Remainder Area)	0	3,323	3,834	74	79	206	0	206	16.2
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,094	6,082	106	106	268	0	268	19.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,198	1,397	26	28	71	0	71	16.9

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301.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	1	2	0	2	0.1
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,937	2,473	495	57	130	33	163	24.2
303.00	El Dorado Diamond Springs	0	3,474	3,686	90	106	231	0	231	15.0
304.00	El Dorado Diamond Springs	0	6,342	382	2,363	12	27	224	251	25.2
305.00	El Dorado Diamond Springs	0	7,574	0	3,121	1	2	283	285	26.5
306.00	El Dorado Diamond Springs	0	1,637	381	618	10	22	55	77	21.3
307.00	El Dorado Diamond Springs	0	617	499	37	16	36	2	38	16.2
308.00	El Dorado Diamond Springs	0	273	275	15	11	25	1	26	10.6
309.00	El Dorado Diamond Springs	0	534	439	52	14	32	4	36	14.9
310.00	El Dorado Diamond Springs	0	4,128	802	1,276	26	59	122	181	22.8
311.00	El Dorado Diamond Springs	0	8,497	1,209	2,100	38	87	158	245	34.7
312.00	El Dorado Diamond Springs	0	869	899	47	31	70	3	73	11.9
313.00	El Dorado Diamond Springs	0	23,148	4,069	6,852	38	99	506	605	38.3
314.00	El Dorado Diamond Springs	0	2,986	3,122	152	81	206	8	214	13.9
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	343	349	9	13	30	0	30	11.6
317.00	El Dorado Diamond Springs	0	206	212	5	8	18	0	18	11.3
318.00	Unincorporated El Dorado County (Remainder Area)	0	4,326	4,720	136	128	326	2	328	13.2
319.00	El Dorado Diamond Springs	0	1,220	1,230	90	38	99	6	105	11.6
320.00	Unincorporated El Dorado County (Remainder Area)	0	5,078	2,169	536	18	44	39	83	60.9
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,310	6,735	102	104	256	0	256	20.7
322.00	Unincorporated El Dorado County (Remainder Area)	0	7,473	8,061	552	153	387	33	420	17.8
323.00	Unincorporated El Dorado County (Remainder Area)	0	2,853	3,469	85	51	129	4	133	21.5
324.00	Unincorporated El Dorado County (Remainder Area)	0	3,650	4,796	61	64	165	0	165	22.2
325.00	Unincorporated El Dorado County (Remainder Area)	0	707	880	14	16	39	0	39	17.9
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,175	2,737	54	49	121	1	122	17.9
327.00	Placerville	0	1,709	2,017	38	40	101	0	101	17.0
328.00	Unincorporated El Dorado County (Remainder Area)	0	849	1,003	18	19	48	0	48	17.7
329.00	Placerville	0	4,871	5,484	123	139	317	0	317	15.3
330.00	Unincorporated El Dorado County (Remainder Area)	0	2,710	3,145	65	73	184	0	184	14.7
331.00	Unincorporated El Dorado County (Remainder Area)	0	5,836	7,163	116	110	274	0	274	21.3
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,544	1,813	36	47	104	0	104	14.8
333.00	Unincorporated El Dorado County (Remainder Area)	0	4,551	5,716	85	91	226	0	226	20.2
334.00	Unincorporated El Dorado County (Remainder Area)	0	3,814	1,182	1,314	26	58	110	168	22.7
335.00	Unincorporated El Dorado County (Remainder Area)	0	3,031	3,312	124	77	165	5	170	17.8
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,228	1,482	25	30	70	0	70	17.4
337.00	Unincorporated El Dorado County (Remainder Area)	0	9,193	7,655	867	121	302	62	364	25.3
338.00	Unincorporated El Dorado County (Remainder Area)	0	14,199	18,039	368	322	831	14	845	16.8
339.00	Unincorporated El Dorado County (Remainder Area)	0	8,620	12,464	118	188	410	0	410	21.0
340.00	Unincorporated El Dorado County (Remainder Area)	0	6,906	8,609	224	93	205	14	219	31.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,496	1,933	86	31	71	8	79	19.0
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,639	3,303	48	48	124	0	124	21.3
343.00	Unincorporated El Dorado County (Remainder Area)	0	3,507	4,134	63	53	116	0	116	30.3
344.00	Unincorporated El Dorado County (Remainder Area)	0	3,782	4,519	68	55	120	0	120	31.5
345.00	Unincorporated El Dorado County (Remainder Area)	0	1,806	1,967	34	29	63	0	63	28.5
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,280	1,413	24	22	49	0	49	25.9
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,937	3,717	48	42	108	0	108	27.1
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,821	3,031	62	49	110	0	110	25.6
349.00	Unincorporated El Dorado County (Remainder Area)	0	6,310	8,045	252	83	191	18	209	30.1
350.00	Unincorporated El Dorado County (Remainder Area)	0	1,183	1,693	17	22	48	0	48	24.6
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,312	1,895	16	23	50	0	50	26.1
352.00	Unincorporated El Dorado County (Remainder Area)	0	1,861	2,638	24	29	63	0	63	29.4
353.00	Unincorporated El Dorado County (Remainder Area)	0	9,072	13,371	99	167	365	1	366	24.8
354.00	Unincorporated El Dorado County (Remainder Area)	0	5,513	3,539	745	53	116	77	193	28.6
355.00	Placerville	1	14,273	6,615	2,937	241	550	244	794	18.0
356.00	Placerville	1	2,503	2,667	73	91	195	0	195	12.8
357.00	Unincorporated El Dorado County (Remainder Area)	0	4,895	3,846	366	89	209	21	230	21.3
358.00	Placerville	0	5,871	2,963	1,182	81	190	98	288	20.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	4,290	5,119	92	105	254	0	254	16.9
360.00	Unincorporated El Dorado County (Remainder Area)	0	5,362	5,834	238	98	237	10	247	21.7
361.00	Placerville	1	17,724	10,344	4,128	458	938	392	1,330	13.3
362.00	Placerville	1	45,971	5,999	10,867	252	591	876	1,467	31.3
363.00	Unincorporated El Dorado County (Remainder Area)	0	327	346	8	13	31	0	31	10.6
364.00	Placerville	0	4,045	3,574	410	138	328	30	358	11.3
365.00	El Dorado Diamond Springs	0	10,762	8,707	1,005	322	722	71	793	13.6
366.00	El Dorado Diamond Springs	0	370	272	39	15	31	4	35	10.5
367.00	El Dorado Diamond Springs	0	4,001	0	1,869	0	0	197	197	20.3
368.00	El Dorado Diamond Springs	0	1,584	1,748	46	68	149	0	149	10.6
369.00	El Dorado Diamond Springs	0	5,570	5,767	257	228	507	13	520	10.7
370.00	El Dorado Diamond Springs	0	6,329	0	2,888	0	0	303	303	20.9
371.00	El Dorado Diamond Springs	0	740	801	17	21	47	0	47	15.9
372.00	El Dorado Diamond Springs	0	16,340	7,581	2,331	195	433	211	644	25.4
373.00	El Dorado Diamond Springs	0	648	650	18	26	59	0	59	11.0
374.00	El Dorado Diamond Springs	0	412	332	28	13	28	2	30	13.5
375.00	El Dorado Diamond Springs	0	368	372	10	14	32	0	32	11.6

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376.00	El Dorado Diamond Springs	0	973	944	56	34	77	3	80	12.2
377.00	El Dorado Diamond Springs	0	558	333	153	13	29	14	43	12.9
378.00	El Dorado Diamond Springs	0	663	659	19	27	59	0	59	11.2
379.00	El Dorado Diamond Springs	0	1,092	1,123	30	48	105	0	105	10.4
380.00	El Dorado Diamond Springs	0	253	247	7	12	26	0	26	9.6
381.00	El Dorado Diamond Springs	0	157	145	5	7	15	0	15	10.2
382.00	El Dorado Diamond Springs	0	259	240	8	11	24	0	24	10.7
383.00	Unincorporated El Dorado County (Remainder Area)	0	1,567	1,739	38	46	102	0	102	15.3
384.00	El Dorado Diamond Springs	0	3,568	3,936	87	120	267	0	267	13.4
385.00	El Dorado Diamond Springs	0	11,080	13,199	273	451	1,002	0	1,002	11.1
386.00	El Dorado Diamond Springs	0	2,617	2,918	62	90	200	0	200	13.1
387.00	El Dorado Diamond Springs	0	1,154	934	100	36	80	8	88	13.1
388.00	El Dorado Diamond Springs	0	6,259	0	2,918	0	0	303	303	20.7
389.00	El Dorado Diamond Springs	0	6,008	11	2,476	2	4	264	268	22.4
390.00	El Dorado Diamond Springs	0	4,209	3,897	325	182	379	23	402	10.5
391.00	El Dorado Diamond Springs	0	2,084	196	497	11	23	54	77	27.1
392.00	El Dorado Diamond Springs	0	667	606	23	28	58	0	58	11.4
393.00	El Dorado Diamond Springs	0	8,964	6,449	985	268	605	68	673	13.3
394.00	El Dorado Diamond Springs	0	187	204	5	8	22	0	22	8.5
395.00	Placerville	1	61,866	1,594	25,869	74	166	2,253	2,419	25.6
396.00	El Dorado Diamond Springs	0	27,749	0	5,758	0	0	439	439	63.2
397.00	El Dorado Diamond Springs	0	1,332	1,280	68	50	114	3	117	11.4
398.00	El Dorado Diamond Springs	0	413	326	38	14	32	3	35	11.9
399.00	El Dorado Diamond Springs	0	1,125	1,146	32	43	97	0	97	11.6
400.00	El Dorado Diamond Springs	0	311	265	11	16	33	0	33	9.3
401.00	Placerville	0	8,935	661	2,609	28	63	213	276	32.4
402.00	El Dorado Diamond Springs	0	3,530	1,465	1,062	51	133	106	239	14.8
403.00	El Dorado Diamond Springs	0	23,330	3,554	7,600	124	258	654	912	25.6
404.00	El Dorado Diamond Springs	0	1,325	413	438	19	42	49	91	14.6
405.00	El Dorado Diamond Springs	0	168	151	5	9	20	0	20	8.5
406.00	El Dorado Diamond Springs	0	18,585	561	3,710	24	53	286	339	54.9
407.00	El Dorado Diamond Springs	0	9,260	16	3,169	1	2	309	311	29.8
408.00	El Dorado Diamond Springs	0	4,088	22	1,650	1	2	182	184	22.2
409.00	Placerville	0	18,571	3,050	5,597	104	248	445	693	26.8
410.00	El Dorado Diamond Springs	0	24,162	14,758	3,492	426	1,031	277	1,308	18.5
411.00	Placerville	1	50,279	6,214	13,167	298	712	1,271	1,983	25.4
412.00	Unincorporated El Dorado County (Remainder Area)	0	2,978	3,233	78	86	206	0	206	14.5
413.00	Placerville	0	3,605	3,815	101	126	301	0	301	12.0
414.00	El Dorado Diamond Springs	0	2,582	130	1,131	7	15	120	135	19.2
415.00	Unincorporated El Dorado County (Remainder Area)	0	430	444	12	18	40	0	40	10.7
416.00	El Dorado Diamond Springs	0	146	146	4	9	19	0	19	7.8
417.00	Placerville	1	9,644	1,107	2,840	45	114	278	392	24.6
418.00	Placerville	1	3,147	0	665	0	0	64	64	49.2
419.00	Placerville	1	3,263	0	836	0	0	85	85	38.4
420.00	Placerville	1	1,759	966	493	42	100	52	152	11.5
421.00	Placerville	1	1,662	1,588	97	68	163	5	168	9.9
422.00	Placerville	1	52,501	6,352	24,504	278	652	1,907	2,559	20.5
423.00	Unincorporated El Dorado County (Remainder Area)	0	461	485	12	20	48	0	48	9.6
424.00	Placerville	0	10,233	4,880	2,502	171	391	228	619	16.5
425.00	Placerville	0	52,759	32,330	5,918	1,167	2,617	563	3,180	16.6
426.00	Placerville	0	861	996	19	33	82	0	82	10.5
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,970	4,574	92	93	232	0	232	17.1
428.00	Unincorporated El Dorado County (Remainder Area)	0	646	746	14	22	55	0	55	11.8
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,315	1,663	34	35	83	0	83	15.9
430.00	Unincorporated El Dorado County (Remainder Area)	0	2,534	2,494	177	58	137	10	147	17.3
431.00	Placerville	1	1,791	475	650	22	45	60	105	17.0
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,295	10,599	2,683	309	729	229	958	16.0
433.00	Placerville	1	10,441	9,739	700	481	1,041	36	1,077	9.7
434.00	Placerville	1	673	591	23	33	71	0	71	9.5
435.00	Placerville	1	1,188	651	241	36	77	27	104	11.4
436.00	Unincorporated El Dorado County (Remainder Area)	0	970	1,156	20	25	62	0	62	15.6
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,387	5,706	247	117	287	12	299	18.0
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,584	5,298	231	124	278	11	289	19.3
439.00	Unincorporated El Dorado County (Remainder Area)	0	5,422	6,350	170	156	350	3	353	15.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	1,391	1,104	175	28	63	15	78	17.9
441.00	Placerville	1	362	379	9	12	29	0	29	12.6
442.00	Placerville	1	13,119	10,749	1,032	313	768	69	837	15.7
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,461	1,578	36	38	85	0	85	17.1
444.00	Unincorporated El Dorado County (Remainder Area)	0	200	221	5	8	19	0	19	10.4
445.00	Placerville	0	1,044	907	150	23	56	11	67	15.5
446.00	Placerville	1	1,761	856	246	25	59	19	78	22.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	3,251	3,985	66	76	189	0	189	17.2
448.00	Placerville	0	1,807	2,106	74	53	130	4	134	13.5
449.00	Unincorporated El Dorado County (Remainder Area)	0	542	577	14	14	30	0	30	18.1
450.00	Unincorporated El Dorado County (Remainder Area)	0	3,275	2,698	391	84	180	31	211	15.5

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
451.00	Unincorporated El Dorado County (Remainder Area)	0	982	1,040	25	27	58	0	58	17.0
452.00	Placerville	0	6,244	4,033	497	121	259	33	292	21.4
453.00	Placerville	1	2,920	3,105	120	145	310	1	311	9.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	568	549	18	25	54	0	54	10.6
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,721	3,086	66	73	172	0	172	15.8
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,886	2,077	48	51	109	0	109	17.3
457.00	Unincorporated El Dorado County (Remainder Area)	0	2,819	3,085	129	62	137	5	142	19.9
458.00	Placerville	0	2,946	2,619	342	67	157	26	183	16.1
459.00	Placerville	0	310	355	7	11	26	0	26	12.0
460.00	Unincorporated El Dorado County (Remainder Area)	0	1,460	972	263	22	47	20	67	21.8
461.00	Unincorporated El Dorado County (Remainder Area)	0	1,565	223	615	6	14	59	73	21.4
462.00	Unincorporated El Dorado County (Remainder Area)	0	5,228	1,290	1,750	31	66	125	191	27.3
463.00	Unincorporated El Dorado County (Remainder Area)	0	4,488	7,292	39	85	194	0	194	23.1
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,536	3,336	39	47	104	0	104	24.5
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,964	5,720	114	58	134	16	150	26.5
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,555	4,448	201	61	139	22	161	22.0
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,490	3,859	23	39	89	0	89	28.0
468.00	Unincorporated El Dorado County (Remainder Area)	0	6,806	9,831	125	120	277	6	283	24.1
469.00	Unincorporated El Dorado County (Remainder Area)	0	4,097	5,697	136	59	131	15	146	28.1
470.00	Unincorporated El Dorado County (Remainder Area)	0	2,035	3,086	27	32	73	1	74	27.5
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,481	2,048	54	23	53	6	59	25.3
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,959	2,309	147	26	59	20	79	24.7
473.00	Unincorporated El Dorado County (Remainder Area)	0	605	580	30	10	23	2	25	24.2
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,699	2,191	28	37	81	0	81	21.0
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,805	2,399	27	38	83	0	83	21.8
476.00	Unincorporated El Dorado County (Remainder Area)	0	864	1,133	12	16	41	0	41	20.9
477.00	Unincorporated El Dorado County (Remainder Area)	0	2,045	2,573	124	30	69	15	84	24.3
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,487	1,927	24	30	66	0	66	22.6
479.00	Unincorporated El Dorado County (Remainder Area)	0	4,077	3,172	440	51	118	37	155	26.4
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,300	2,003	13	20	46	0	46	28.5
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,338	2,036	15	20	44	0	44	30.4
482.00	Unincorporated El Dorado County (Remainder Area)	0	5,646	7,976	92	74	163	3	166	34.1
483.00	Unincorporated El Dorado County (Remainder Area)	0	4,445	5,275	173	115	249	9	258	17.3
484.00	Unincorporated El Dorado County (Remainder Area)	0	6,777	5,680	946	91	227	114	341	19.9
485.00	Unincorporated El Dorado County (Remainder Area)	0	1,063	1,531	11	15	37	0	37	28.4
486.00	Unincorporated El Dorado County (Remainder Area)	0	4,083	5,928	47	69	156	0	156	26.2
487.00	Unincorporated El Dorado County (Remainder Area)	0	11,842	11,399	738	221	519	36	555	21.4
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,557	7,619	86	107	242	0	242	23.0
489.00	Unincorporated El Dorado County (Remainder Area)	0	6,896	7,117	660	133	300	58	358	19.3
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,178	1,538	19	24	60	0	60	19.7
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,409	9,176	177	160	399	3	402	18.4
492.00	Unincorporated El Dorado County (Remainder Area)	0	5,070	4,500	409	71	176	31	207	24.5
493.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	4,579	369	72	178	26	204	24.9
494.00	Unincorporated El Dorado County (Remainder Area)	0	3,263	3,979	138	68	170	10	180	18.2
495.00	Unincorporated El Dorado County (Remainder Area)	0	656	856	11	16	40	0	40	16.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,379	4,590	830	81	201	67	268	27.6
497.00	Unincorporated El Dorado County (Remainder Area)	0	4,347	5,756	101	88	224	3	227	19.1
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,454	4,492	104	70	158	6	164	21.1
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,346	1,798	22	30	75	0	75	18.0
500.00	Unincorporated El Dorado County (Remainder Area)	0	4,083	1,337	603	11	26	51	77	53.2
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,808	1,022	768	22	49	83	132	21.3
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,033	7,736	352	117	272	18	290	24.2
503.00	Unincorporated El Dorado County (Remainder Area)	0	4,153	0	1,008	1	2	76	78	53.1
504.00	Unincorporated El Dorado County (Remainder Area)	0	6,108	6,534	343	141	313	19	332	18.4
505.00	Unincorporated El Dorado County (Remainder Area)	0	74	87	1	3	7	0	7	11.1
506.00	Unincorporated El Dorado County (Remainder Area)	0	1,029	1,250	22	28	62	0	62	16.6
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,752	2,393	392	50	116	37	153	18.0
508.00	Unincorporated El Dorado County (Remainder Area)	0	6,692	3,518	1,838	85	184	186	370	18.1
509.00	Unincorporated El Dorado County (Remainder Area)	0	393	429	22	12	27	2	29	13.7
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,234	3,520	157	92	199	10	209	15.5
511.00	Unincorporated El Dorado County (Remainder Area)	0	2,740	1,892	359	45	105	33	138	19.9
512.00	Unincorporated El Dorado County (Remainder Area)	0	2,838	1,992	367	37	86	27	113	25.1
513.00	Unincorporated El Dorado County (Remainder Area)	0	7,477	10,836	84	142	354	0	354	21.1
514.00	Unincorporated El Dorado County (Remainder Area)	0	32,106	47,391	312	622	1,551	0	1,551	20.7
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,629	4,821	105	69	176	8	184	19.7
516.00	Unincorporated El Dorado County (Remainder Area)	0	8,173	11,879	87	142	362	0	362	22.6
517.00	Unincorporated El Dorado County (Remainder Area)	0	19,039	21,380	1,115	388	857	101	958	19.9
518.00	Unincorporated El Dorado County (Remainder Area)	0	11,960	15,832	307	289	671	17	688	17.4
519.00	Unincorporated El Dorado County (Remainder Area)	0	5,901	7,870	191	142	330	12	342	17.3
520.00	Unincorporated El Dorado County (Remainder Area)	0	11,992	16,228	269	266	617	12	629	19.1
521.00	Unincorporated El Dorado County (Remainder Area)	0	10,889	13,191	582	290	641	60	701	15.5
522.00	Unincorporated El Dorado County (Remainder Area)	0	5,120	7,270	64	85	221	0	221	23.2
523.00	Unincorporated El Dorado County (Remainder Area)	0	16,443	10,406	1,915	240	588	206	794	20.7
524.00	Unincorporated El Dorado County (Remainder Area)	0	14,718	12,705	1,116	205	490	103	593	24.8
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,898	7,178	44	85	199	0	199	24.6

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526.00	Unincorporated El Dorado County (Remainder Area)	0	245	337	3	5	12	0	12	20.1
527.00	Unincorporated El Dorado County (Remainder Area)	0	7,774	9,539	362	162	380	38	418	18.6
528.00	Unincorporated El Dorado County (Remainder Area)	0	60,006	84,666	795	1,001	2,429	72	2,501	24.0
529.00	Unincorporated El Dorado County (Remainder Area)	0	918	1,151	13	15	36	0	36	25.3
530.00	Unincorporated El Dorado County (Remainder Area)	0	12,935	17,342	192	191	462	0	462	28.0
531.00	Unincorporated El Dorado County (Remainder Area)	0	2,532	3,399	35	34	82	0	82	30.8
532.00	Unincorporated El Dorado County (Remainder Area)	0	4,004	5,168	59	61	147	0	147	27.2
533.00	Unincorporated El Dorado County (Remainder Area)	0	9,332	8,598	646	105	271	34	305	30.6
534.00	Unincorporated El Dorado County (Remainder Area)	0	3,792	4,964	52	53	128	0	128	29.6
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,939	7,821	74	91	221	0	221	26.8
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,094	6,591	64	82	200	0	200	25.5
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,402	14,167	106	165	402	0	402	25.9
538.00	Unincorporated El Dorado County (Remainder Area)	0	3,968	3,050	305	44	107	22	129	30.8
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,010	1,306	2,081	6	15	166	181	72.1
540.00	Unincorporated El Dorado County (Remainder Area)	0	2,858	0	573	0	0	53	53	53.9
541.00	Unincorporated El Dorado County (Remainder Area)	0	1,053	1,120	61	18	42	6	48	21.8
542.00	Unincorporated El Dorado County (Remainder Area)	0	3,614	3,101	413	52	123	37	160	22.6
543.00	Unincorporated El Dorado County (Remainder Area)	0	10,542	2,441	1,776	49	114	107	221	47.6
544.00	Unincorporated El Dorado County (Remainder Area)	0	681	498	104	9	21	8	29	23.4
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,523	2,049	16	23	54	0	54	28.3
546.00	Unincorporated El Dorado County (Remainder Area)	0	4,817	6,440	54	61	143	0	143	33.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,023	524	482	10	23	46	69	58.0
548.00	Unincorporated El Dorado County (Remainder Area)	0	17,510	23,380	468	386	910	22	932	18.8
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,163	2,726	39	42	99	0	99	21.8
550.00	Unincorporated El Dorado County (Remainder Area)	0	265	348	4	7	18	0	18	14.7
551.00	Unincorporated El Dorado County (Remainder Area)	0	5,423	2,531	783	41	105	54	159	34.0
552.00	Unincorporated El Dorado County (Remainder Area)	0	2,435	424	501	8	19	32	51	48.0
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,569	2,062	26	32	75	0	75	21.0
554.00	Unincorporated El Dorado County (Remainder Area)	0	4,054	5,262	105	83	194	4	198	20.5
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,656	2,243	24	34	80	0	80	20.6
556.00	Unincorporated El Dorado County (Remainder Area)	0	5,106	6,998	66	82	192	0	192	26.6
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,697	2,098	31	35	82	1	83	20.5
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,721	2,996	163	36	84	19	103	26.3
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,378	1,831	17	25	59	0	59	23.5
560.00	Unincorporated El Dorado County (Remainder Area)	0	1,606	1,676	100	27	63	10	73	22.0
561.00	Unincorporated El Dorado County (Remainder Area)	0	1,184	1,583	18	22	52	0	52	22.7
562.00	Unincorporated El Dorado County (Remainder Area)	0	4,027	5,917	39	62	145	0	145	27.7
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,212	3,368	17	32	71	0	71	31.3
564.00	Unincorporated El Dorado County (Remainder Area)	0	623	838	10	14	33	0	33	18.6
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,638	3,681	39	56	129	0	129	20.4
566.00	Unincorporated El Dorado County (Remainder Area)	0	4,003	5,401	70	93	220	1	221	18.1
567.00	Unincorporated El Dorado County (Remainder Area)	0	671	816	26	18	42	2	44	15.4
568.00	Unincorporated El Dorado County (Remainder Area)	0	930	1,259	14	26	62	0	62	15.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	3,704	2,851	298	61	144	31	175	21.1
570.00	Unincorporated El Dorado County (Remainder Area)	0	4,744	2,123	776	40	92	92	184	25.7
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,372	1,845	22	33	76	0	76	18.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	1,866	1,378	263	25	61	34	95	19.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	6,528	7,898	121	89	197	2	199	32.9
574.00	Unincorporated El Dorado County (Remainder Area)	0	5,058	8,013	30	71	174	0	174	29.1
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,778	4,123	16	29	71	0	71	39.1
576.00	Unincorporated El Dorado County (Remainder Area)	0	1,095	1,547	16	19	42	1	43	25.5
577.00	Unincorporated El Dorado County (Remainder Area)	0	753	1,118	7	13	29	0	29	26.2
578.00	Unincorporated El Dorado County (Remainder Area)	0	23,503	37,350	106	370	817	0	817	28.8
579.00	Unincorporated El Dorado County (Remainder Area)	0	3,792	5,287	101	38	96	12	108	35.0
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,896	4,149	62	35	89	5	94	30.9
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,282	5,114	291	43	95	32	127	33.8
582.00	Unincorporated El Dorado County (Remainder Area)	0	1,261	1,714	16	13	34	0	34	37.3
583.00	Unincorporated El Dorado County (Remainder Area)	0	27,771	43,413	212	352	774	10	784	35.4
584.00	Unincorporated El Dorado County (Remainder Area)	0	1,740	2,103	55	18	40	3	43	40.8
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,588	14,403	78	124	273	0	273	35.2
586.00	Unincorporated El Dorado County (Remainder Area)	0	5,843	2,533	1,558	51	91	92	183	32.0
587.00	Unincorporated El Dorado County (Remainder Area)	0	2,289	3,436	17	39	99	0	99	23.0
588.00	Unincorporated El Dorado County (Remainder Area)	0	19,823	30,328	126	323	805	0	805	24.6
589.00	Unincorporated El Dorado County (Remainder Area)	0	395	630	2	3	12	0	12	32.9
590.00	Unincorporated El Dorado County (Remainder Area)	0	833	1,150	12	18	46	0	46	18.3
591.00	Unincorporated El Dorado County (Remainder Area)	0	86	123	1	3	8	0	8	11.4
592.00	Unincorporated El Dorado County (Remainder Area)	0	12,739	13,315	740	339	749	91	840	15.2
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,965	9,126	265	151	382	28	410	17.0
594.00	Unincorporated El Dorado County (Remainder Area)	0	17,030	24,924	182	312	790	5	795	21.4
595.00	Unincorporated El Dorado County (Remainder Area)	0	1,946	1,834	265	25	56	31	87	22.3
596.00	Unincorporated El Dorado County (Remainder Area)	0	2,840	2,795	221	34	85	25	110	25.9
597.00	Unincorporated El Dorado County (Remainder Area)	0	11,039	4,049	1,918	106	234	278	512	21.5
598.00	Unincorporated El Dorado County (Remainder Area)	0	1,720	545	259	14	31	35	66	26.1
599.00	Unincorporated El Dorado County (Remainder Area)	0	715	973	11	17	38	0	38	19.0
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,306	11,133	1,269	205	453	130	583	19.4

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601.00	Unincorporated El Dorado County (Remainder Area)	0	1,342	1,908	4	10	22	0	22	61.0
602.00	Unincorporated El Dorado County (Remainder Area)	0	433	137	53	3	5	2	7	59.0
603.00	Unincorporated El Dorado County (Remainder Area)	0	906	730	84	11	20	2	22	42.0
604.00	Unincorporated El Dorado County (Remainder Area)	0	1,420	1,780	109	17	33	3	36	39.3
605.00	Unincorporated El Dorado County (Remainder Area)	0	1,654	1,772	86	18	38	2	40	41.4
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,532	4,860	12	19	49	0	49	71.5
608.00	Unincorporated El Dorado County (Remainder Area)	0	6	0	0	1	2	0	2	2.9
609.00	Unincorporated El Dorado County (Remainder Area)	0	3,028	3,206	117	34	72	4	76	40.0
610.00	El Dorado Hills	0	38,969	187	20,583	0	0	1,745	1,745	22.3
611.00	El Dorado Hills	0	316	0	10	153	0	1	1	315.9
612.00	El Dorado Hills	0	79,458	0	44,736	0	0	3,121	3,121	25.5
613.00	Unincorporated El Dorado County (Remainder Area)	0	71	67	1	2	5	0	5	13.8
614.00	El Dorado Hills	0	5,975	7,100	116	150	383	0	383	15.6
615.00	El Dorado Hills	0	12,188	9,071	1,040	150	402	75	477	25.5
616.00	El Dorado Hills	0	1,376	1,639	25	37	94	0	94	14.7
617.00	El Dorado Hills	0	20,632	12,687	1,258	187	547	118	665	31.0
618.00	El Dorado Hills	0	3,139	0	1,256	0	0	146	146	21.5
619.00	El Dorado Hills	0	3,467	0	1,261	0	0	151	151	23.0
620.00	El Dorado Hills	0	17,865	3,490	1,790	0	0	188	188	95.0
621.00	El Dorado Hills	0	14,208	18,720	224	327	957	0	957	14.8
622.00	El Dorado Hills	0	21,968	21,498	1,636	370	1,083	147	1,230	17.9
623.00	Unincorporated El Dorado County (Remainder Area)	0	393	0	174	0	0	16	16	24.6
624.00	El Dorado Hills	0	15,651	17,525	1,200	308	905	96	1,001	15.6
625.00	El Dorado Hills	0	863	0	420	0	0	40	40	21.6
626.00	Unincorporated El Dorado County (Remainder Area)	0	8,711	7,521	1,121	164	383	98	481	18.1
627.00	Unincorporated El Dorado County (Remainder Area)	0	54,253	0	11,339	0	0	897	897	60.5
628.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	7,832	8,544	203	381	847	0	847	9.3
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,447	1,741	25	37	94	0	94	15.5
633.00	Unincorporated El Dorado County (Remainder Area)	0	6,290	7,468	123	150	379	0	379	16.6
634.00	Unincorporated El Dorado County (Remainder Area)	0	6,482	7,797	122	150	379	0	379	17.1
635.00	Unincorporated El Dorado County (Remainder Area)	0	4,991	5,916	94	113	286	0	286	17.5
636.00	Unincorporated El Dorado County (Remainder Area)	0	4,368	6,089	81	120	322	0	322	13.6
637.00	Unincorporated El Dorado County (Remainder Area)	0	7,992	9,863	140	171	458	0	458	17.4
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,039	1,269	16	23	62	0	62	16.8
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,274	2,819	36	46	123	0	123	18.4
640.00	Unincorporated El Dorado County (Remainder Area)	0	7,716	9,618	127	176	472	0	472	16.4
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,087	2,600	34	46	123	0	123	16.9
642.00	Unincorporated El Dorado County (Remainder Area)	0	29,024	33,878	1,281	637	1,708	93	1,801	16.1
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,808	12,090	163	216	579	0	579	16.9
644.00	Unincorporated El Dorado County (Remainder Area)	0	2,919	3,670	47	76	194	0	194	15.1
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,271	24,691	955	415	1,059	51	1,110	19.2
646.00	Unincorporated El Dorado County (Remainder Area)	0	8,837	11,046	155	192	490	0	490	18.0
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,587	1,894	69	38	97	6	103	15.4
648.00	Unincorporated El Dorado County (Remainder Area)	0	1,808	2,170	46	38	97	2	99	18.3
649.00	Unincorporated El Dorado County (Remainder Area)	0	5,525	3,129	31	38	97	0	97	57.0
650.00	Outside of County	0	3,020,646	1,488,289	470,784	0	0	0	0	-
651.00	Outside of County	0	28,450	14,302	4,198	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	391,721	159,741	51,481	0	0	0	0	-
654.00	Outside of County	0	56,173	9,086	2,880	0	0	0	0	-
655.00	Outside of County	0	269,519	107,646	35,175	0	0	0	0	-
656.00	Outside of County	0	77,253	18,161	8,701	0	0	0	0	-
657.00	Outside of County	0	186,669	8,198	3,843	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	7,533	3,128	1,419	0	0	0	0	-
660.00	Outside of County	0	164,229	81,861	31,508	0	0	0	0	-
661.00	Outside of County	0	156,627	71,475	25,660	0	0	0	0	-
662.00	Outside of County	0	700,907	338,567	119,749	0	0	0	0	-
663.00	Outside of County	0	679,389	227,243	81,123	0	0	0	0	-
664.00	Outside of County	0	348,270	190,199	55,021	0	0	0	0	-
665.00	Outside of County	0	199,541	79,509	31,009	0	0	0	0	-
666.00	Outside of County	0	88,362	45,073	14,353	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	513,118	311,624	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	170,014	96,042	23,797	0	0	0	0	-
672.00	Outside of County	0	33,285	34,313	0	0	0	0	0	-
673.00	Outside of County	0	24,906	14,947	0	0	0	0	0	-
674.00	Outside of County	0	355,394	30,005	0	0	0	0	0	-

VMT Summary by Jurisdiction - 2040 Baseline Scenario

	VMT Estimates			VMT Efficiency Metrics			Population Details				
Jurisdiction	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	401,612	63,156	104,882	24.6	8.2	12.1	3,429	7,658	8,649	16,307	2.23
Unincorporated El Dorado County	5,040,987	3,109,752	673,703	21.1	17.0	11.9	73,473	182,760	56,413	239,174	2.49
630	6,276	5,981	185	7.41	7.06	#DIV/0!	381	847	0	847	2.22
				Threshold	14.5						

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	5,579	1,769	820	47	99	36	135	41.3
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,316	24,675	870	592	1,338	77	1,415	16.5
3.00	Unincorporated El Dorado County (Remainder Area)	0	5,272	6,535	98	74	180	0	180	29.4
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,066	1,369	17	16	35	0	35	30.7
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,591	3,600	26	33	73	0	73	35.5
6.00	Unincorporated El Dorado County (Remainder Area)	0	13,826	15,986	505	366	847	14	861	16.1
7.00	Unincorporated El Dorado County (Remainder Area)	0	24,305	26,908	1,345	565	1,223	92	1,315	18.5
8.00	Unincorporated El Dorado County (Remainder Area)	0	11,252	575	1,967	15	38	129	167	67.5
9.00	Unincorporated El Dorado County (Remainder Area)	0	25,143	30,540	627	559	1,400	13	1,413	17.8
10.00	Outside of County	0	108,475	87,151	11,414	2,178	5,588	1,056	6,644	16.3
11.00	Outside of County	0	112,003	80,623	13,801	2,148	5,511	1,297	6,808	16.5
12.00	Outside of County	0	58,744	44,768	4,887	1,179	3,234	437	3,671	16.0
13.00	Outside of County	0	34,414	39,916	1,543	906	2,458	99	2,557	13.5
14.00	Outside of County	0	58,412	67,433	1,704	1,511	4,120	78	4,198	13.9
15.00	Outside of County	0	3,038	3,906	59	58	166	0	166	18.3
16.00	Outside of County	0	56,196	21,626	7,618	659	1,614	689	2,303	24.4
17.00	Outside of County	0	160,298	140,470	14,052	2,811	7,160	1,363	8,523	18.8
18.00	Outside of County	0	84,505	96,522	3,631	1,930	4,652	246	4,898	17.3
19.00	Outside of County	0	10,281	5,760	1,092	96	217	103	320	32.1
20.00	Outside of County	0	7,647	142	4,091	2	7	283	290	26.4
21.00	Outside of County	0	26,259	73	13,609	2	4	1,082	1,086	24.2
22.00	Outside of County	0	1,685	10	337	1	1	21	22	76.6
23.00	Outside of County	0	29,029	12,699	3,678	115	322	261	583	49.8
24.00	Outside of County	0	4,212	3,131	140	133	133	0	133	31.7
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	109,238	102,903	7,983	2,238	5,070	642	5,712	19.1
27.00	Outside of County	0	8,215	76	3,031	2	5	338	343	24.0
28.00	Outside of County	0	240,362	201,435	17,135	4,828	12,553	1,923	14,476	16.6
29.00	Outside of County	0	8,668	11,058	162	170	486	0	486	17.8
30.00	Outside of County	0	70,998	73,400	5,815	1,194	3,041	368	3,409	20.8
31.00	Outside of County	0	10,201	5,264	599	41	106	44	150	67.8
32.00	Outside of County	0	29,860	38,625	686	692	1,811	21	1,832	16.3
33.00	Outside of County	0	38,475	47,860	1,366	857	2,183	69	2,252	17.1
34.00	Outside of County	0	6,130	5,972	702	69	156	32	188	32.6
35.00	Outside of County	0	30,792	37,343	777	812	2,092	0	2,092	14.7
36.00	Outside of County	0	37,316	45,139	908	910	2,318	0	2,318	16.1
37.00	Outside of County	0	58,282	2,562	21,925	57	142	1,643	1,785	32.7
38.00	Outside of County	0	6,665	3,876	636	57	142	45	187	35.7
39.00	Outside of County	0	17,108	14,630	2,127	514	1,180	181	1,361	12.6
40.00	Outside of County	0	76,320	22,269	16,275	851	1,972	1,905	3,877	19.7
41.00	Outside of County	0	35,512	24,476	7,541	592	1,368	567	1,935	18.3
42.00	Outside of County	0	175,394	97,698	24,764	2,081	5,108	1,911	7,019	25.0
43.00	Outside of County	0	34,519	40,317	974	849	2,170	46	2,216	15.6
44.00	Outside of County	0	110,555	81,184	8,898	1,827	4,654	791	5,445	20.3
45.00	Outside of County	0	72,863	23,227	12,149	846	1,936	1,262	3,198	22.8
46.00	Outside of County	0	5,976	6,512	151	164	375	0	375	15.9
47.00	Outside of County	0	201,607	9,484	80,719	284	681	5,991	6,672	30.2
48.00	Outside of County	0	48,383	43,166	3,747	1,211	3,071	266	3,337	14.5
49.00	Outside of County	0	109,980	585	50,000	18	45	4,248	4,293	25.6
50.00	Outside of County	0	73,353	36,460	21,911	981	2,487	1,736	4,223	17.4
51.00	Outside of County	0	98,059	51,828	15,654	1,710	4,116	1,373	5,489	17.9
52.00	Outside of County	0	30,590	15,166	3,168	279	629	279	908	33.7
53.00	Outside of County	0	79,332	48,635	10,884	1,399	3,606	983	4,589	17.3
54.00	Outside of County	0	60,029	22,517	22,306	494	1,220	1,748	2,968	20.2
55.00	Outside of County	0	76,830	30,209	13,814	639	1,471	1,127	2,598	29.6
56.00	Outside of County	0	36,176	40,532	1,296	872	2,337	56	2,393	15.1
57.00	Outside of County	0	107,517	24,353	46,409	660	1,466	4,152	5,618	19.1
58.00	Outside of County	0	36,143	26,285	4,421	613	1,587	352	1,939	18.6
59.00	Outside of County	0	45,142	90	26,872	2	5	2,191	2,196	20.6
60.00	Outside of County	0	67,979	8,281	30,885	240	512	2,711	3,223	21.1
61.00	Outside of County	0	140,521	87,253	22,573	2,381	5,595	1,810	7,405	19.0
62.00	Outside of County	0	51,740	1,926	23,906	33	110	2,000	2,110	24.5
63.00	Outside of County	0	66,088	5,334	27,148	143	350	2,462	2,812	23.5
64.00	Outside of County	0	129,040	74,096	20,741	2,031	5,053	1,733	6,786	19.0
65.00	Outside of County	0	5,629	6,366	126	127	328	0	328	17.2
66.00	Outside of County	0	37,802	28,377	4,191	887	2,117	331	2,448	15.4
67.00	Outside of County	0	117,344	22,079	38,646	633	1,374	3,381	4,755	24.7
68.00	Outside of County	0	38,691	12,546	10,830	453	946	1,002	1,948	19.9
69.00	Outside of County	0	240,406	69,411	96,412	1,950	5,172	7,364	12,536	19.2
70.00	Outside of County	0	160,829	1,048	97,010	15	38	7,503	7,541	21.3
71.00	Outside of County	0	216,841	131,089	32,137	2,596	6,730	2,417	9,147	23.7
72.00	Outside of County	0	270,161	753	155,227	0	0	10,084	10,084	26.8
73.00	Outside of County	0	96,287	0	60,297	0	0	4,612	4,612	20.9
74.00	Outside of County	0	134,613	17,384	66,208	546	1,335	5,255	6,590	20.4
75.00	Outside of County	0	84,326	62,447	16,943	1,946	4,535	1,072	5,607	15.0

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
76.00	Outside of County	0	27,689	16,867	3,811	497	1,333	313	1,646	16.8
77.00	Outside of County	0	81,150	42,260	19,399	1,068	2,684	1,384	4,068	19.9
78.00	Outside of County	0	70,536	0	20,297	1	2	1,777	1,779	39.6
79.00	Outside of County	0	75,775	57,941	9,235	1,345	3,258	620	3,878	19.5
80.00	Outside of County	0	33,623	0	16,401	0	0	1,306	1,306	25.7
81.00	Outside of County	0	178,905	0	100,318	0	0	7,809	7,809	22.9
82.00	Outside of County	0	52,426	0	25,960	0	0	2,171	2,171	24.1
83.00	Outside of County	0	51,016	34,421	6,781	590	1,536	460	1,996	25.6
84.00	Outside of County	0	51,732	41,969	4,058	1,305	3,049	306	3,355	15.4
85.00	Outside of County	0	55,056	46,209	4,634	1,261	3,154	354	3,508	15.7
86.00	Outside of County	0	84,727	60,596	8,187	1,996	4,538	681	5,219	16.2
87.00	Outside of County	0	63,399	50,418	7,524	1,845	3,996	613	4,609	13.8
88.00	Outside of County	0	71,139	42,295	8,237	1,184	2,955	696	3,651	19.5
89.00	Outside of County	0	18,650	0	6,027	0	0	455	455	41.0
90.00	Outside of County	0	56,984	2,014	28,180	92	157	2,453	2,610	21.8
91.00	Outside of County	0	99,137	13,504	36,166	389	997	3,846	4,843	20.5
92.00	Outside of County	0	50,870	47,753	2,478	1,234	2,964	133	3,097	16.4
93.00	Outside of County	0	93,264	64,867	18,700	1,374	3,459	1,484	4,943	18.9
94.00	Outside of County	0	1,126	102	457	2	4	41	45	25.0
95.00	Outside of County	0	120,091	0	63,367	0	0	4,542	4,542	26.4
96.00	Outside of County	0	161,279	53,660	54,244	1,026	2,520	3,884	6,404	25.2
97.00	Outside of County	0	57,253	51,315	4,477	1,030	2,624	349	2,973	19.3
98.00	Outside of County	0	84,323	13,320	27,370	375	984	2,705	3,689	22.9
99.00	Outside of County	0	71,276	27,643	23,150	806	1,976	2,391	4,367	16.3
100.00	Outside of County	0	21,449	26,928	441	470	1,178	0	1,178	18.2
101.00	Outside of County	0	54,746	41,741	8,809	869	2,253	822	3,075	17.8
102.00	Outside of County	0	22,173	5,190	6,166	92	237	467	704	31.5
103.00	Outside of County	0	96,062	106,739	4,003	2,474	5,823	281	6,104	15.7
104.00	Outside of County	0	60,111	9,199	12,967	184	451	868	1,319	45.6
105.00	Outside of County	0	40,719	52,262	882	1,011	2,513	10	2,523	16.1
106.00	Outside of County	0	6,843	0	3,173	0	0	283	283	24.2
107.00	Outside of County	0	296,735	40,404	94,681	1,362	3,008	7,445	10,453	28.4
108.00	Outside of County	0	27,055	16,969	5,693	370	988	479	1,467	18.4
109.00	Outside of County	0	16,634	0	7,351	0	0	563	563	29.5
110.00	Outside of County	0	62,320	8,660	28,476	209	495	2,207	2,702	23.1
111.00	Outside of County	0	82,138	7,447	15,315	223	512	1,049	1,561	52.6
112.00	Outside of County	0	133,955	30,412	26,942	763	2,056	2,119	4,175	32.1
113.00	Outside of County	0	53,816	116	23,736	0	0	2,386	2,386	22.6
114.00	Outside of County	0	35,988	29,349	6,433	809	2,141	572	2,713	13.3
115.00	Outside of County	0	153,121	86,149	20,887	1,900	4,875	1,584	6,459	23.7
116.00	Outside of County	0	2,994	0	1,478	0	0	116	116	25.8
117.00	Outside of County	0	51,651	17,172	15,424	327	920	1,448	2,368	21.8
118.00	Outside of County	0	76,589	80,883	3,257	2,338	6,182	191	6,373	12.0
119.00	Outside of County	0	134,133	7,149	62,456	216	540	6,222	6,762	19.8
120.00	Outside of County	0	177,138	0	43,476	0	0	4,669	4,669	37.9
121.00	Outside of County	0	137,428	48,181	19,563	1,513	3,882	1,917	5,799	23.7
122.00	Outside of County	0	56,523	14,942	10,513	533	1,248	1,125	2,373	23.8
123.00	Outside of County	0	28,606	6,973	5,112	200	547	536	1,083	26.4
124.00	Outside of County	0	52,847	48,210	2,789	1,044	2,229	168	2,397	22.1
125.00	Outside of County	0	27,928	10,040	5,558	414	817	583	1,400	20.0
126.00	Outside of County	0	16,122	4,834	2,904	156	342	274	616	26.2
127.00	Outside of County	0	38,734	33,884	2,393	870	1,855	169	2,024	19.1
128.00	Outside of County	0	66,133	47,581	6,815	1,262	2,600	538	3,138	21.1
129.00	Outside of County	0	41,390	43,793	1,835	1,045	2,302	117	2,419	17.1
130.00	Outside of County	0	21,005	9,187	2,667	342	786	298	1,084	19.4
131.00	Outside of County	0	47,379	14,752	11,314	494	1,013	1,272	2,285	20.7
132.00	Outside of County	0	27,982	23,287	2,770	556	1,258	235	1,493	18.7
133.00	Outside of County	0	118,975	58,572	14,486	2,077	5,182	1,628	6,810	17.5
134.00	Outside of County	0	61,590	30,144	18,095	1,074	2,483	1,578	4,061	15.2
135.00	Outside of County	0	50,368	0	27,603	0	0	2,740	2,740	18.4
136.00	Outside of County	0	25,741	27,471	1,373	661	1,688	93	1,781	14.5
137.00	Outside of County	0	112,109	102,156	7,010	2,426	6,986	595	7,581	14.8
138.00	El Dorado Diamond Springs	0	21,857	6,118	4,299	264	577	297	874	25.0
139.00	El Dorado Diamond Springs	0	10,440	1,353	1,680	67	144	156	300	34.8
140.00	El Dorado Diamond Springs	0	56,312	129	10,130	10	22	811	833	67.6
141.00	Unincorporated El Dorado County (Remainder Area)	0	1,488	1,671	28	21	49	0	49	30.3
142.00	Unincorporated El Dorado County (Remainder Area)	0	6,598	6,556	170	156	347	0	347	19.0
143.00	Unincorporated El Dorado County (Remainder Area)	0	4,201	3,341	253	108	240	12	252	16.7
144.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	3,582	338	80	200	21	221	18.2
145.00	Unincorporated El Dorado County (Remainder Area)	0	740	652	25	30	70	0	70	10.6
146.00	El Dorado Diamond Springs	0	6,215	2,363	1,092	114	261	98	359	17.3
147.00	El Dorado Diamond Springs	0	3,722	3,578	130	165	378	0	378	9.8
148.00	Outside of County	0	155,364	185,717	5,374	2,264	5,302	120	5,422	28.7
149.00	Shingle Springs	0	16,644	1,747	3,538	53	149	287	436	38.2
150.00	Unincorporated El Dorado County (Remainder Area)	0	6,007	6,849	132	107	254	0	254	23.7

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,304	1,730	19	23	67	0	67	19.5
152.00	Shingle Springs	0	34,233	6,118	5,240	201	488	370	858	39.9
153.00	Unincorporated El Dorado County (Remainder Area)	0	8,554	8,160	246	290	623	0	623	13.7
154.00	Unincorporated El Dorado County (Remainder Area)	0	6,914	7,042	193	254	597	0	597	11.6
155.00	Shingle Springs	0	5,209	5,654	133	154	406	0	406	12.8
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,048	2,322	58	27	68	1	69	29.7
157.00	El Dorado Hills	0	8,631	10,833	168	273	790	0	790	10.9
158.00	Cameron Park	0	17,360	18,545	508	624	1,431	11	1,442	12.0
159.00	Cameron Park	0	15,333	14,515	1,454	446	1,082	114	1,196	12.8
160.00	Shingle Springs	0	18,373	16,567	1,169	504	1,223	70	1,293	14.2
161.00	El Dorado Hills	0	11,338	14,216	209	290	754	0	754	15.0
162.00	El Dorado Hills	0	57,308	77,477	888	1,503	4,465	0	4,465	12.8
163.00	El Dorado Hills	0	37,663	7,618	5,109	165	490	438	928	40.6
164.00	El Dorado Hills	0	61,278	0	32,462	0	0	3,124	3,124	19.6
165.00	El Dorado Hills	0	17,357	20,543	425	551	1,369	0	1,369	12.7
166.00	Outside of County	0	28,690	30,497	1,016	766	1,965	50	2,015	14.2
167.00	El Dorado Hills	0	47,806	46,471	2,372	1,520	3,531	111	3,641	13.1
168.00	El Dorado Hills	0	26,959	29,622	1,086	1,133	2,632	35	2,667	10.1
169.00	El Dorado Hills	0	118,930	5,576	25,772	208	517	2,484	3,001	39.6
170.00	El Dorado Hills	0	46,960	721	23,759	26	65	2,562	2,627	17.9
171.00	El Dorado Hills	0	16,335	16,257	1,066	441	1,081	68	1,148	14.2
172.00	El Dorado Hills	0	9,474	0	1,700	0	0	158	158	60.0
173.00	El Dorado Hills	0	46,456	0	11,188	0	0	1,140	1,140	40.8
174.00	Unincorporated El Dorado County (Remainder Area)	0	3,866	1,489	1,080	15	38	54	92	42.1
175.00	Unincorporated El Dorado County (Remainder Area)	0	2,615	632	485	10	24	22	46	57.2
176.00	Unincorporated El Dorado County (Remainder Area)	0	3,210	3,644	70	58	137	0	137	23.4
177.00	Unincorporated El Dorado County (Remainder Area)	0	11,090	8,590	1,821	147	370	130	500	22.2
178.00	Unincorporated El Dorado County (Remainder Area)	0	4,883	5,633	139	87	223	3	226	21.6
179.00	Unincorporated El Dorado County (Remainder Area)	0	736	929	12	21	55	0	55	13.5
180.00	El Dorado Hills	0	18,183	22,312	354	450	1,155	0	1,155	15.7
181.00	El Dorado Hills	0	6,986	5,396	693	120	315	61	376	18.6
182.00	Cameron Park	0	39,144	47,584	772	1,244	3,262	0	3,262	12.0
183.00	Unincorporated El Dorado County (Remainder Area)	0	10,991	11,963	269	354	832	0	832	13.2
184.00	Cameron Park	0	39,190	16,157	4,519	417	1,093	425	1,518	25.8
185.00	Cameron Park	0	3,895	4,368	87	152	349	0	349	11.2
186.00	Cameron Park	0	50,984	4,595	8,943	170	390	896	1,286	39.7
187.00	Cameron Park	0	10,760	7,155	1,217	247	566	104	670	16.0
188.00	Cameron Park	0	6,610	5,625	600	213	489	49	538	12.3
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,453	3,143	40	36	100	0	100	24.4
190.00	Unincorporated El Dorado County (Remainder Area)	0	10,405	13,307	183	255	712	0	712	14.6
191.00	El Dorado Hills	0	1,434	1,825	24	39	109	0	109	13.2
192.00	El Dorado Hills	0	865	1,090	14	25	69	0	69	12.5
193.00	El Dorado Hills	0	14,296	5,218	3,692	156	406	361	768	18.6
194.00	El Dorado Hills	0	15,021	19,443	268	439	1,297	0	1,297	11.6
195.00	El Dorado Hills	0	9,034	468	2,013	10	26	176	203	44.6
196.00	Outside of County	0	52,335	59,703	1,729	1,148	3,198	97	3,295	15.9
197.00	El Dorado Hills	0	3,180	3,913	56	85	225	0	225	14.1
198.00	El Dorado Hills	0	69,010	39,068	6,095	887	2,476	623	3,099	22.3
199.00	El Dorado Hills	0	11,333	2,868	1,625	62	173	143	316	35.9
200.00	El Dorado Hills	0	6,397	304	1,226	7	19	121	140	45.8
201.00	El Dorado Hills	0	20,655	6,772	2,772	150	443	269	712	29.0
202.00	El Dorado Hills	0	37,451	35,355	2,124	762	2,127	169	2,296	16.3
203.00	El Dorado Hills	0	51,614	65,540	1,164	1,300	3,762	43	3,805	13.6
204.00	El Dorado Hills	0	17,144	16,115	640	362	1,048	48	1,096	15.6
205.00	El Dorado Hills	0	504	0	245	0	0	30	30	16.8
206.00	El Dorado Hills	0	1,620	2,069	28	51	148	0	148	11.0
207.00	El Dorado Hills	0	12,927	16,533	221	304	880	0	880	14.7
208.00	Unincorporated El Dorado County (Remainder Area)	0	325	425	5	9	26	0	26	12.5
209.00	El Dorado Hills	0	11,561	4,445	1,420	88	254	118	372	31.1
210.00	El Dorado Hills	0	6,336	8,133	109	162	479	0	479	13.2
211.00	Unincorporated El Dorado County (Remainder Area)	0	134	178	2	4	11	0	11	11.9
212.00	El Dorado Hills	0	2,396	3,100	39	53	153	0	153	15.6
213.00	Unincorporated El Dorado County (Remainder Area)	0	9,173	11,793	154	193	534	0	534	17.2
214.00	Unincorporated El Dorado County (Remainder Area)	0	2,329	3,357	31	31	76	0	76	30.8
215.00	El Dorado Hills	0	6,785	8,619	122	148	413	0	413	16.4
216.00	Unincorporated El Dorado County (Remainder Area)	0	1,748	2,460	26	23	56	0	56	31.2
217.00	Unincorporated El Dorado County (Remainder Area)	0	586	759	9	11	31	0	31	19.1
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,509	1,892	26	28	78	0	78	19.3
219.00	Unincorporated El Dorado County (Remainder Area)	0	3,899	4,955	68	69	191	0	191	20.4
220.00	Unincorporated El Dorado County (Remainder Area)	0	470	633	6	9	25	0	25	18.9
221.00	El Dorado Hills	0	37,290	48,504	582	999	2,596	0	2,596	14.4
222.00	Cameron Park	0	2,166	1,462	428	34	90	58	148	14.6
223.00	Cameron Park	0	5,502	7,074	79	174	461	0	461	11.9
224.00	Unincorporated El Dorado County (Remainder Area)	0	8,562	7,304	502	144	382	37	419	20.4
225.00	Unincorporated El Dorado County (Remainder Area)	0	23,238	10,896	2,974	147	424	277	702	33.1

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226.00	Cameron Park	0	27,511	26,935	1,259	550	1,591	118	1,709	16.1
227.00	Cameron Park	0	8,648	10,989	208	281	689	10	699	12.4
228.00	Cameron Park	0	20,455	24,962	510	724	1,775	25	1,800	11.4
229.00	El Dorado Hills	0	41,453	34,408	2,383	793	2,061	237	2,298	18.0
230.00	El Dorado Hills	0	22,827	27,709	343	557	1,655	0	1,655	13.8
231.00	Unincorporated El Dorado County (Remainder Area)	0	4,969	6,636	73	134	388	0	388	12.8
232.00	Unincorporated El Dorado County (Remainder Area)	0	4,540	5,860	73	87	241	0	241	18.9
233.00	Cameron Park	0	8,473	3,657	750	116	266	100	366	23.1
234.00	Cameron Park	0	55,517	33,403	5,112	1,085	2,488	670	3,158	17.6
235.00	Cameron Park	0	42,214	54,278	643	1,322	3,580	2	3,582	11.8
236.00	Cameron Park	0	14,737	19,295	263	473	1,281	9	1,290	11.4
237.00	Cameron Park	0	2,246	2,612	46	78	179	0	179	12.6
238.00	Cameron Park	0	39,561	15,063	5,326	415	1,018	527	1,545	25.6
239.00	Cameron Park	0	2,338	3,344	35	86	228	0	228	10.3
240.00	Unincorporated El Dorado County (Remainder Area)	0	6,564	8,292	110	137	363	0	363	18.1
241.00	Cameron Park	0	14,967	7,533	1,281	181	480	151	631	23.7
242.00	Cameron Park	0	698	903	9	24	64	0	64	11.0
243.00	Cameron Park	0	2,018	2,585	32	61	162	1	163	12.4
244.00	Unincorporated El Dorado County (Remainder Area)	0	3,011	3,719	57	51	128	0	128	23.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	772	1,000	11	10	30	0	30	25.7
246.00	Unincorporated El Dorado County (Remainder Area)	0	3,912	5,183	56	63	189	0	189	20.7
247.00	Unincorporated El Dorado County (Remainder Area)	0	13,702	14,472	352	296	636	0	636	21.5
248.00	Unincorporated El Dorado County (Remainder Area)	0	13,461	10,485	945	182	431	39	470	28.6
249.00	Unincorporated El Dorado County (Remainder Area)	0	3,356	1,861	530	26	56	25	81	41.5
250.00	Unincorporated El Dorado County (Remainder Area)	0	2,873	3,282	60	53	124	0	124	23.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	5,624	6,207	136	139	363	0	363	15.5
252.00	Unincorporated El Dorado County (Remainder Area)	0	24,853	28,786	577	666	1,756	0	1,756	14.2
253.00	Unincorporated El Dorado County (Remainder Area)	0	7,492	8,852	159	149	410	0	410	18.3
254.00	Unincorporated El Dorado County (Remainder Area)	0	5,267	5,894	123	119	311	0	311	16.9
255.00	Cameron Park	0	65,000	0	14,931	0	0	1,405	1,405	46.3
256.00	Cameron Park	0	44,564	1,991	10,526	72	175	872	1,047	42.6
257.00	Shingle Springs	0	62,244	15,314	14,621	511	1,335	1,312	2,647	23.5
258.00	Unincorporated El Dorado County (Remainder Area)	0	2,125	2,529	40	36	99	0	99	21.5
259.00	Unincorporated El Dorado County (Remainder Area)	0	2,609	3,108	52	50	132	0	132	19.8
260.00	Shingle Springs	0	27,091	140	5,662	5	15	441	456	59.4
261.00	Shingle Springs	0	27,149	3,576	4,858	121	333	388	721	37.7
262.00	Shingle Springs	0	40,676	5,459	6,543	203	530	514	1,044	39.0
263.00	Shingle Springs	0	10,043	3,812	1,483	121	333	119	452	22.2
264.00	Shingle Springs	0	7,888	3,085	1,054	97	267	82	349	22.6
265.00	Unincorporated El Dorado County (Remainder Area)	0	1,958	2,212	43	44	116	0	116	16.9
266.00	Unincorporated El Dorado County (Remainder Area)	0	6,107	1,675	663	41	88	33	121	50.4
267.00	Unincorporated El Dorado County (Remainder Area)	0	8,702	10,057	218	240	633	0	633	13.8
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,043	3,109	171	72	190	10	200	15.2
269.00	Unincorporated El Dorado County (Remainder Area)	0	13,580	9,377	1,436	217	558	81	639	21.2
270.00	Unincorporated El Dorado County (Remainder Area)	0	6,206	2,673	678	54	135	39	174	35.7
271.00	Unincorporated El Dorado County (Remainder Area)	0	9,854	9,955	735	172	442	50	492	20.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	9,793	6,472	807	145	407	55	462	21.2
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,462	8,896	377	138	400	22	422	17.7
274.00	Unincorporated El Dorado County (Remainder Area)	0	21,554	18,871	1,569	411	1,153	122	1,275	16.9
275.00	Unincorporated El Dorado County (Remainder Area)	0	14,761	17,116	337	379	971	0	971	15.2
276.00	Cameron Park	0	28,073	18,733	2,079	535	1,312	179	1,491	18.8
277.00	Cameron Park	0	4,942	5,794	100	176	427	0	427	11.6
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,751	5,980	218	100	265	10	275	20.9
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,923	3,723	49	55	146	0	146	20.0
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,437	1,674	31	37	103	0	103	14.0
281.00	Unincorporated El Dorado County (Remainder Area)	0	4,878	4,198	427	85	238	28	266	18.3
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,389	1,615	30	39	109	0	109	12.7
283.00	Shingle Springs	0	15,342	3,059	2,226	0	0	197	197	77.9
284.00	Shingle Springs	0	4,297	1,006	657	36	87	53	140	30.6
285.00	Unincorporated El Dorado County (Remainder Area)	0	14,052	2,733	2,958	53	154	233	387	36.3
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,660	2,071	30	36	101	0	101	16.4
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,395	1,684	27	34	87	0	87	16.0
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,175	2,688	40	50	140	0	140	15.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	320	421	5	8	23	0	23	13.8
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,045	2,615	35	44	128	0	128	16.0
291.00	Unincorporated El Dorado County (Remainder Area)	0	12,428	15,748	238	254	647	0	647	19.2
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,250	5,680	64	72	209	0	209	20.3
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,295	1,293	36	41	90	0	90	14.4
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,480	4,711	122	129	321	0	321	14.0
295.00	Unincorporated El Dorado County (Remainder Area)	0	62,242	4,932	22,453	110	282	1,540	1,822	34.2
296.00	El Dorado Diamond Springs	0	52,060	6,594	9,703	188	496	729	1,225	42.5
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,263	2,679	61	79	208	0	208	10.9
298.00	Unincorporated El Dorado County (Remainder Area)	0	2,831	3,090	71	79	208	0	208	13.6
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,004	5,738	112	114	293	0	293	17.1
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,731	1,925	41	45	116	0	116	15.0

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301.00	Unincorporated El Dorado County (Remainder Area)	0	624	550	41	20	44	3	47	13.4
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,845	2,600	206	89	194	10	204	18.8
303.00	El Dorado Diamond Springs	0	4,184	2,690	440	106	228	28	255	16.4
304.00	El Dorado Diamond Springs	0	8,274	284	2,637	12	26	269	296	28.0
305.00	El Dorado Diamond Springs	0	10,690	0	4,934	1	2	536	539	19.9
306.00	El Dorado Diamond Springs	0	7,868	3,187	1,335	128	275	110	386	20.4
307.00	El Dorado Diamond Springs	0	2,949	2,833	91	112	257	0	257	11.5
308.00	El Dorado Diamond Springs	0	240	246	6	12	28	0	28	8.7
309.00	El Dorado Diamond Springs	0	808	725	26	34	74	0	74	10.9
310.00	El Dorado Diamond Springs	0	13,709	642	2,482	29	66	220	286	47.9
311.00	El Dorado Diamond Springs	0	3,541	1,737	435	75	164	33	197	18.0
312.00	El Dorado Diamond Springs	0	9,892	6,856	964	310	711	71	782	12.6
313.00	El Dorado Diamond Springs	0	23,368	3,354	6,963	71	178	534	712	32.8
314.00	El Dorado Diamond Springs	0	10,492	2,521	1,442	100	249	103	352	29.8
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	675	645	22	31	68	0	68	10.0
317.00	El Dorado Diamond Springs	0	140	127	4	8	17	0	17	8.0
318.00	Unincorporated El Dorado County (Remainder Area)	0	8,081	4,764	726	182	452	41	493	16.4
319.00	El Dorado Diamond Springs	0	1,393	1,293	45	57	143	0	143	9.7
320.00	Unincorporated El Dorado County (Remainder Area)	0	4,871	1,574	809	19	48	61	109	44.5
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,216	6,169	137	116	295	2	297	17.5
322.00	Unincorporated El Dorado County (Remainder Area)	0	10,687	10,628	568	242	623	26	649	16.5
323.00	Unincorporated El Dorado County (Remainder Area)	0	8,269	3,764	1,835	67	172	139	311	26.5
324.00	Unincorporated El Dorado County (Remainder Area)	0	7,026	3,637	696	73	183	39	222	31.7
325.00	Unincorporated El Dorado County (Remainder Area)	0	718	837	16	20	51	0	51	14.1
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,085	2,472	49	57	145	0	145	14.4
327.00	Placerville	0	3,213	3,517	82	84	210	0	210	15.3
328.00	Unincorporated El Dorado County (Remainder Area)	0	698	796	15	19	48	0	48	14.7
329.00	Placerville	0	4,822	4,870	140	156	360	0	360	13.4
330.00	Unincorporated El Dorado County (Remainder Area)	0	3,485	3,717	94	109	273	0	273	12.8
331.00	Unincorporated El Dorado County (Remainder Area)	0	6,130	7,010	140	130	325	0	325	18.9
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,433	1,532	38	47	105	0	105	13.6
333.00	Unincorporated El Dorado County (Remainder Area)	0	3,947	4,535	87	91	225	0	225	17.6
334.00	Unincorporated El Dorado County (Remainder Area)	0	1,640	1,005	256	26	58	18	76	21.5
335.00	Unincorporated El Dorado County (Remainder Area)	0	2,813	3,039	73	76	163	0	163	17.2
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,047	1,123	26	30	66	0	66	15.8
337.00	Unincorporated El Dorado County (Remainder Area)	0	10,177	6,049	1,756	124	304	128	432	23.5
338.00	Unincorporated El Dorado County (Remainder Area)	0	13,876	15,829	396	350	900	11	911	15.2
339.00	Unincorporated El Dorado County (Remainder Area)	0	9,287	12,032	145	224	508	0	508	18.3
340.00	Unincorporated El Dorado County (Remainder Area)	0	8,024	5,281	509	95	202	30	232	34.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,631	1,556	173	34	75	16	91	18.0
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,391	2,766	49	48	123	0	123	19.4
343.00	Unincorporated El Dorado County (Remainder Area)	0	4,976	5,794	91	78	177	0	177	28.2
344.00	Unincorporated El Dorado County (Remainder Area)	0	5,878	6,978	106	92	208	0	208	28.2
345.00	Unincorporated El Dorado County (Remainder Area)	0	2,019	2,139	39	34	77	0	77	26.2
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,271	1,255	27	23	51	0	51	24.8
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,656	3,154	49	42	108	0	108	24.6
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,519	2,492	58	48	107	0	107	23.6
349.00	Unincorporated El Dorado County (Remainder Area)	0	8,166	4,926	577	94	193	34	227	35.9
350.00	Unincorporated El Dorado County (Remainder Area)	0	988	1,147	17	20	45	0	45	21.8
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,471	1,857	23	31	70	0	70	20.9
352.00	Unincorporated El Dorado County (Remainder Area)	0	2,104	2,704	31	38	86	0	86	24.4
353.00	Unincorporated El Dorado County (Remainder Area)	0	10,687	10,315	513	200	453	43	496	21.5
354.00	Unincorporated El Dorado County (Remainder Area)	0	7,014	4,698	456	68	154	43	197	35.6
355.00	Placerville	1	27,093	5,158	4,932	257	594	387	981	27.6
356.00	Placerville	1	2,711	2,564	91	109	235	0	235	11.6
357.00	Unincorporated El Dorado County (Remainder Area)	0	8,037	4,256	727	133	294	42	336	23.9
358.00	Placerville	0	10,277	3,375	1,625	128	283	123	406	25.3
359.00	Unincorporated El Dorado County (Remainder Area)	0	3,541	3,718	93	105	247	0	247	14.3
360.00	Unincorporated El Dorado County (Remainder Area)	0	4,201	4,599	97	97	228	0	228	18.4
361.00	Placerville	1	26,883	10,093	4,583	570	1,189	370	1,558	17.3
362.00	Placerville	1	46,470	3,872	7,929	194	457	616	1,073	43.3
363.00	Unincorporated El Dorado County (Remainder Area)	0	414	429	11	19	48	0	48	8.6
364.00	Placerville	0	4,529	3,737	411	173	439	28	466	9.7
365.00	El Dorado Diamond Springs	0	23,891	9,410	2,902	541	1,147	223	1,370	17.4
366.00	El Dorado Diamond Springs	0	10,290	1,572	1,547	108	232	146	378	27.2
367.00	El Dorado Diamond Springs	0	7,104	0	3,431	0	0	398	398	17.9
368.00	El Dorado Diamond Springs	0	4,857	1,347	807	68	157	81	238	20.4
369.00	El Dorado Diamond Springs	0	13,862	8,846	1,310	485	1,088	114	1,202	11.5
370.00	El Dorado Diamond Springs	0	6,831	70	2,807	0	0	317	317	21.6
371.00	El Dorado Diamond Springs	0	2,151	2,090	60	69	155	0	155	13.9
372.00	El Dorado Diamond Springs	0	28,232	13,956	3,089	559	1,254	296	1,550	18.2
373.00	El Dorado Diamond Springs	0	554	498	17	27	62	0	62	8.9
374.00	El Dorado Diamond Springs	0	1,036	278	114	14	32	10	42	24.5
375.00	El Dorado Diamond Springs	0	360	332	11	15	34	0	34	10.5

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
376.00	El Dorado Diamond Springs	0	1,486	730	216	34	78	17	95	15.7
377.00	El Dorado Diamond Springs	0	714	316	167	14	32	16	48	14.8
378.00	El Dorado Diamond Springs	0	543	520	15	27	62	0	62	8.7
379.00	El Dorado Diamond Springs	0	935	879	28	48	111	0	111	8.4
380.00	El Dorado Diamond Springs	0	195	187	6	12	28	0	28	7.0
381.00	El Dorado Diamond Springs	0	115	113	3	7	16	0	16	7.1
382.00	El Dorado Diamond Springs	0	219	185	7	11	25	0	25	8.6
383.00	Unincorporated El Dorado County (Remainder Area)	0	2,330	2,390	62	80	179	0	179	13.0
384.00	El Dorado Diamond Springs	0	4,397	4,410	115	174	390	0	390	11.3
385.00	El Dorado Diamond Springs	0	13,528	13,365	452	600	1,346	14	1,360	9.9
386.00	El Dorado Diamond Springs	0	2,188	2,210	56	90	202	0	202	10.8
387.00	El Dorado Diamond Springs	0	3,238	749	449	36	81	44	124	26.0
388.00	El Dorado Diamond Springs	0	5,394	0	2,511	0	0	278	278	19.4
389.00	El Dorado Diamond Springs	0	5,811	19	2,063	2	5	240	245	23.8
390.00	El Dorado Diamond Springs	0	7,164	4,869	681	311	670	54	724	9.9
391.00	El Dorado Diamond Springs	0	5,829	143	904	11	24	92	116	50.3
392.00	El Dorado Diamond Springs	0	1,006	479	87	28	60	5	66	15.3
393.00	El Dorado Diamond Springs	0	25,347	4,805	3,728	281	645	288	932	27.2
394.00	El Dorado Diamond Springs	0	6,088	112	2,026	8	18	168	186	32.8
395.00	Placerville	1	79,545	1,468	29,419	98	206	2,613	2,819	28.2
396.00	El Dorado Diamond Springs	0	30,339	0	5,461	0	0	425	425	71.5
397.00	El Dorado Diamond Springs	0	1,450	913	119	50	109	7	116	12.5
398.00	El Dorado Diamond Springs	0	1,145	267	142	14	32	11	43	26.4
399.00	El Dorado Diamond Springs	0	956	840	32	43	99	0	99	9.7
400.00	El Dorado Diamond Springs	0	7,244	212	1,215	16	35	97	132	55.1
401.00	Placerville	0	26,725	947	4,545	57	121	337	458	58.4
402.00	El Dorado Diamond Springs	0	4,663	2,586	1,018	137	344	103	447	10.4
403.00	El Dorado Diamond Springs	0	31,030	2,548	12,377	124	267	906	1,174	26.4
404.00	El Dorado Diamond Springs	0	1,693	305	320	19	44	32	76	22.4
405.00	El Dorado Diamond Springs	0	1,637	149	242	9	21	21	41	39.5
406.00	El Dorado Diamond Springs	0	25,826	390	4,299	24	55	339	395	65.5
407.00	El Dorado Diamond Springs	0	15,798	558	3,068	39	84	285	369	42.8
408.00	El Dorado Diamond Springs	0	5,448	0	2,274	1	2	279	281	19.4
409.00	Placerville	0	37,714	3,540	7,957	162	410	610	1,019	37.0
410.00	El Dorado Diamond Springs	0	39,727	14,469	5,458	602	1,418	423	1,840	21.6
411.00	Placerville	1	54,993	5,309	11,324	335	793	982	1,775	31.0
412.00	Unincorporated El Dorado County (Remainder Area)	0	3,443	3,328	104	114	271	0	271	12.7
413.00	Placerville	0	4,909	4,618	168	199	472	1	473	10.4
414.00	El Dorado Diamond Springs	0	19,753	93	5,161	7	15	561	576	34.3
415.00	Unincorporated El Dorado County (Remainder Area)	0	433	322	41	18	38	4	42	10.3
416.00	El Dorado Diamond Springs	0	265	129	53	9	19	7	26	10.1
417.00	Placerville	1	22,722	916	4,761	55	124	424	548	41.5
418.00	Placerville	1	5,468	0	1,367	0	0	130	130	42.1
419.00	Placerville	1	6,847	0	1,199	0	0	112	112	61.2
420.00	Placerville	1	5,241	975	1,309	56	132	117	249	21.1
421.00	Placerville	1	2,546	1,471	404	81	191	28	219	11.6
422.00	Placerville	1	67,123	5,191	31,006	303	714	2,392	3,106	21.6
423.00	Unincorporated El Dorado County (Remainder Area)	0	448	392	26	21	49	1	50	9.0
424.00	Placerville	0	25,499	5,390	4,408	252	582	351	934	27.3
425.00	Placerville	0	66,785	28,851	8,028	1,390	3,090	730	3,820	17.5
426.00	Placerville	0	705	728	18	32	80	0	80	8.8
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,813	4,049	100	102	255	0	255	15.0
428.00	Unincorporated El Dorado County (Remainder Area)	0	550	586	14	22	55	0	55	10.0
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,195	1,401	35	35	87	0	87	13.8
430.00	Unincorporated El Dorado County (Remainder Area)	0	3,100	2,021	545	59	146	44	190	16.3
431.00	Placerville	1	13,523	513	2,238	28	59	167	226	59.8
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,629	10,664	3,090	363	900	241	1,140	13.7
433.00	Placerville	1	16,881	10,065	2,255	678	1,398	175	1,572	10.7
434.00	Placerville	1	826	642	30	44	95	0	95	8.7
435.00	Placerville	1	1,289	673	230	47	100	27	127	10.2
436.00	Unincorporated El Dorado County (Remainder Area)	0	1,146	1,177	49	32	79	2	81	14.2
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,373	5,949	131	147	371	0	371	14.5
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,831	4,284	504	143	303	32	335	17.4
439.00	Unincorporated El Dorado County (Remainder Area)	0	9,557	4,677	1,511	169	359	90	449	21.3
440.00	Unincorporated El Dorado County (Remainder Area)	0	5,900	868	1,557	31	66	111	177	33.4
441.00	Placerville	1	399	394	11	15	35	0	35	11.4
442.00	Placerville	1	13,532	9,903	964	350	882	56	939	14.4
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,947	1,891	56	59	125	0	125	15.5
444.00	Unincorporated El Dorado County (Remainder Area)	0	273	180	17	8	19	1	20	13.7
445.00	Placerville	0	839	791	55	26	65	3	68	12.3
446.00	Placerville	1	4,223	766	692	28	65	53	119	35.6
447.00	Unincorporated El Dorado County (Remainder Area)	0	8,279	3,171	1,560	81	199	116	314	26.3
448.00	Placerville	0	1,807	2,042	51	64	161	0	161	11.2
449.00	Unincorporated El Dorado County (Remainder Area)	0	467	479	12	14	30	0	30	15.5
450.00	Unincorporated El Dorado County (Remainder Area)	0	2,337	2,209	75	84	180	0	180	13.0

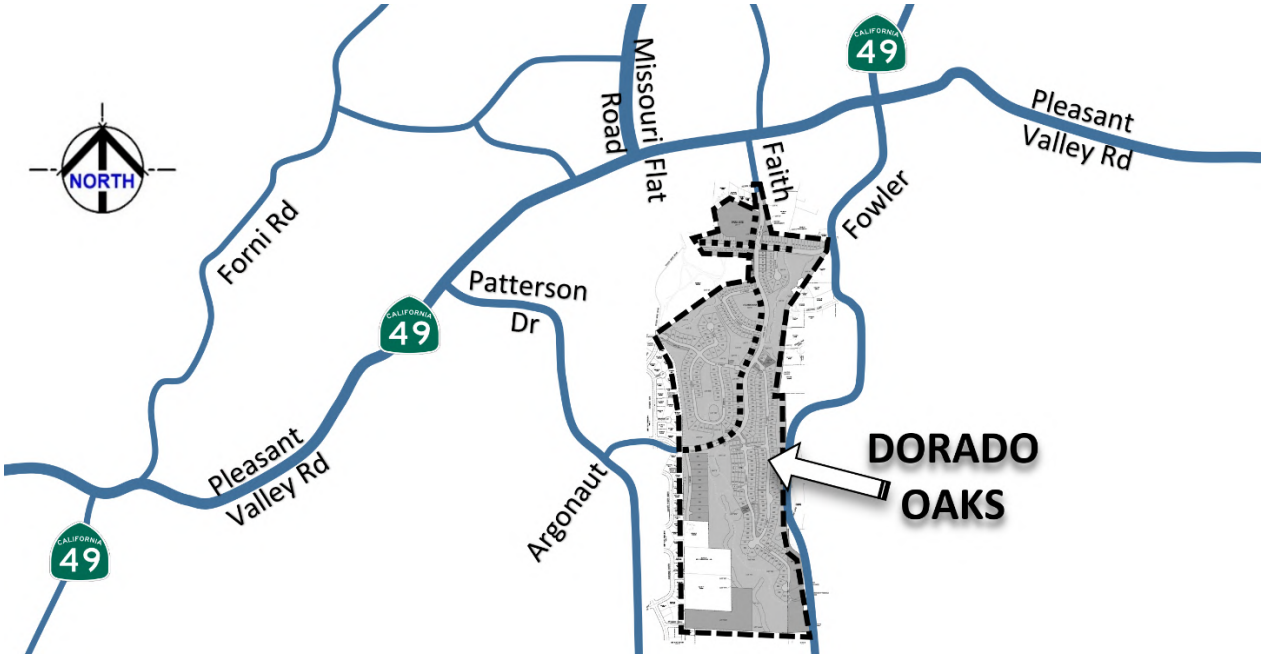
TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
451.00	Unincorporated El Dorado County (Remainder Area)	0	896	872	26	27	58	0	58	15.5
452.00	Placerville	0	6,846	3,645	916	150	321	66	387	17.7
453.00	Placerville	1	3,296	3,183	138	182	391	0	391	8.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	542	479	18	28	59	0	59	9.2
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,540	2,677	67	73	181	0	181	14.0
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,778	1,781	50	51	109	0	109	16.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	3,129	3,027	248	68	153	13	166	18.8
458.00	Placerville	0	11,332	1,930	1,817	71	157	130	287	39.5
459.00	Placerville	0	727	704	21	28	62	0	62	11.7
460.00	Unincorporated El Dorado County (Remainder Area)	0	826	797	23	22	47	0	47	17.5
461.00	Unincorporated El Dorado County (Remainder Area)	0	114	128	2	6	13	0	13	8.6
462.00	Unincorporated El Dorado County (Remainder Area)	0	2,606	1,247	401	31	67	24	91	28.8
463.00	Unincorporated El Dorado County (Remainder Area)	0	3,736	5,345	47	89	195	0	195	19.1
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,795	3,419	47	55	129	0	129	21.7
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,735	5,401	33	65	163	0	163	22.9
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,081	3,407	113	65	143	7	150	20.6
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,493	3,506	29	49	107	0	107	23.2
468.00	Unincorporated El Dorado County (Remainder Area)	0	5,822	6,929	96	128	263	0	263	22.1
469.00	Unincorporated El Dorado County (Remainder Area)	0	3,795	5,180	42	70	156	0	156	24.3
470.00	Unincorporated El Dorado County (Remainder Area)	0	1,669	2,156	23	33	72	0	72	23.1
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,210	1,597	17	26	57	0	57	21.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,208	1,633	17	26	57	0	57	21.2
473.00	Unincorporated El Dorado County (Remainder Area)	0	1,175	675	222	13	33	25	58	20.4
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,758	2,041	35	42	95	0	95	18.5
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,840	2,198	33	42	95	0	95	19.3
476.00	Unincorporated El Dorado County (Remainder Area)	0	4,005	905	523	16	41	34	75	53.3
477.00	Unincorporated El Dorado County (Remainder Area)	0	1,575	2,183	20	31	78	0	78	20.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,227	1,441	24	30	66	0	66	18.5
479.00	Unincorporated El Dorado County (Remainder Area)	0	5,061	3,304	420	62	156	29	185	27.4
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,697	2,445	28	31	68	1	69	24.6
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,356	1,932	18	24	53	0	53	25.5
482.00	Unincorporated El Dorado County (Remainder Area)	0	6,451	8,506	87	102	226	0	226	28.6
483.00	Unincorporated El Dorado County (Remainder Area)	0	9,533	4,703	1,030	132	285	76	361	26.4
484.00	Unincorporated El Dorado County (Remainder Area)	0	8,644	4,850	1,171	104	267	118	384	22.5
485.00	Unincorporated El Dorado County (Remainder Area)	0	2,237	3,016	30	40	103	0	103	21.8
486.00	Unincorporated El Dorado County (Remainder Area)	0	5,298	7,084	75	110	249	0	249	21.3
487.00	Unincorporated El Dorado County (Remainder Area)	0	18,692	8,278	3,040	228	504	184	688	27.2
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,753	7,311	104	125	283	0	283	20.4
489.00	Unincorporated El Dorado County (Remainder Area)	0	7,399	6,636	405	157	355	24	379	19.5
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,521	1,813	31	35	86	0	86	17.7
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,430	8,832	160	181	444	0	444	16.7
492.00	Unincorporated El Dorado County (Remainder Area)	0	8,810	3,464	1,039	76	188	72	259	34.0
493.00	Unincorporated El Dorado County (Remainder Area)	0	9,793	3,613	1,460	79	195	101	296	33.1
494.00	Unincorporated El Dorado County (Remainder Area)	0	6,327	3,004	757	71	174	55	229	27.7
495.00	Unincorporated El Dorado County (Remainder Area)	0	644	752	14	17	42	0	42	15.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,206	4,235	709	94	232	52	284	25.3
497.00	Unincorporated El Dorado County (Remainder Area)	0	9,450	5,010	1,005	109	263	75	338	28.0
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,598	4,048	175	78	176	13	189	19.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,510	1,841	30	38	93	0	93	16.2
500.00	Unincorporated El Dorado County (Remainder Area)	0	5,284	1,091	1,164	11	24	97	121	43.6
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,231	818	552	22	49	58	107	20.8
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,282	8,965	139	147	349	0	349	20.8
503.00	Unincorporated El Dorado County (Remainder Area)	0	5,058	10	841	1	2	56	58	86.9
504.00	Unincorporated El Dorado County (Remainder Area)	0	13,640	5,078	1,626	140	313	103	416	32.8
505.00	Unincorporated El Dorado County (Remainder Area)	0	80	96	1	3	7	0	7	12.0
506.00	Unincorporated El Dorado County (Remainder Area)	0	995	1,021	35	28	64	1	65	15.4
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,133	2,505	48	61	145	0	145	14.7
508.00	Unincorporated El Dorado County (Remainder Area)	0	4,879	2,873	1,159	85	184	114	298	16.4
509.00	Unincorporated El Dorado County (Remainder Area)	0	2,067	408	650	12	27	77	104	19.9
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,521	2,937	223	92	200	15	215	16.4
511.00	Unincorporated El Dorado County (Remainder Area)	0	1,992	1,577	132	46	109	9	118	16.8
512.00	Unincorporated El Dorado County (Remainder Area)	0	1,913	2,182	43	45	107	0	107	17.9
513.00	Unincorporated El Dorado County (Remainder Area)	0	8,041	10,386	170	178	456	7	463	17.4
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,586	43,289	374	714	1,830	0	1,830	17.3
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,176	4,090	54	78	188	0	188	16.9
516.00	Unincorporated El Dorado County (Remainder Area)	0	7,426	10,049	102	162	391	0	391	19.0
517.00	Unincorporated El Dorado County (Remainder Area)	0	23,520	19,064	1,723	489	1,085	139	1,224	19.2
518.00	Unincorporated El Dorado County (Remainder Area)	0	13,162	12,408	799	325	745	53	799	16.5
519.00	Unincorporated El Dorado County (Remainder Area)	0	7,752	6,233	744	162	371	60	432	18.0
520.00	Unincorporated El Dorado County (Remainder Area)	0	13,996	12,205	1,168	296	678	99	778	18.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	15,920	9,299	1,662	309	686	167	853	18.7
522.00	Unincorporated El Dorado County (Remainder Area)	0	4,848	5,866	167	96	236	9	245	19.8
523.00	Unincorporated El Dorado County (Remainder Area)	0	24,559	10,068	3,122	302	698	272	970	25.3
524.00	Unincorporated El Dorado County (Remainder Area)	0	19,187	8,816	2,531	214	495	207	702	27.3
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,566	5,788	59	97	233	0	233	19.6

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526.00	Unincorporated El Dorado County (Remainder Area)	0	3,209	4,038	56	55	142	0	142	22.6
527.00	Unincorporated El Dorado County (Remainder Area)	0	8,815	6,977	839	186	447	71	517	17.0
528.00	Unincorporated El Dorado County (Remainder Area)	0	51,707	63,997	890	1,061	2,556	51	2,607	19.8
529.00	Unincorporated El Dorado County (Remainder Area)	0	1,259	1,222	124	19	46	8	54	23.2
530.00	Unincorporated El Dorado County (Remainder Area)	0	13,295	17,592	223	226	551	0	551	24.1
531.00	Unincorporated El Dorado County (Remainder Area)	0	3,815	5,011	62	59	144	0	144	26.6
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,640	4,572	65	64	156	0	156	23.3
533.00	Unincorporated El Dorado County (Remainder Area)	0	11,666	9,349	986	151	367	53	420	27.8
534.00	Unincorporated El Dorado County (Remainder Area)	0	4,280	5,433	72	69	168	0	168	25.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,369	6,746	84	95	245	0	245	21.9
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,498	6,975	83	106	273	0	273	20.1
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,965	14,386	138	208	536	0	536	20.4
538.00	Unincorporated El Dorado County (Remainder Area)	0	15,602	7,382	1,840	159	382	137	519	30.0
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,563	1,924	1,909	11	27	142	169	80.2
540.00	Unincorporated El Dorado County (Remainder Area)	0	9,637	0	1,690	0	0	132	132	72.8
541.00	Unincorporated El Dorado County (Remainder Area)	0	2,569	842	300	18	43	24	67	38.2
542.00	Unincorporated El Dorado County (Remainder Area)	0	6,150	2,203	963	55	130	76	206	29.9
543.00	Unincorporated El Dorado County (Remainder Area)	0	32,285	1,678	6,353	50	118	368	486	66.4
544.00	Unincorporated El Dorado County (Remainder Area)	0	2,509	2,678	62	58	137	0	137	18.3
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,420	1,758	20	27	64	0	64	22.2
546.00	Unincorporated El Dorado County (Remainder Area)	0	7,992	10,049	115	131	310	0	310	25.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,916	533	759	13	31	64	95	51.9
548.00	Unincorporated El Dorado County (Remainder Area)	0	15,335	17,568	597	405	960	27	987	15.5
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,385	2,762	64	54	128	1	129	18.5
550.00	Unincorporated El Dorado County (Remainder Area)	0	6,351	1,699	995	40	100	62	162	39.1
551.00	Unincorporated El Dorado County (Remainder Area)	0	8,967	1,814	1,356	46	115	87	202	44.4
552.00	Unincorporated El Dorado County (Remainder Area)	0	1,059	455	106	11	26	6	32	33.1
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,476	1,740	32	35	83	0	83	17.8
554.00	Unincorporated El Dorado County (Remainder Area)	0	6,779	7,941	189	185	438	5	443	15.3
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,558	1,761	31	39	92	0	92	16.9
556.00	Unincorporated El Dorado County (Remainder Area)	0	4,505	5,470	80	89	211	0	211	21.4
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,812	1,550	214	34	81	20	101	18.0
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,008	2,508	27	40	96	0	96	20.9
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,258	1,460	22	28	67	0	67	18.7
560.00	Unincorporated El Dorado County (Remainder Area)	0	5,898	1,198	1,747	28	66	172	238	24.7
561.00	Unincorporated El Dorado County (Remainder Area)	0	901	1,024	19	23	54	0	54	16.6
562.00	Unincorporated El Dorado County (Remainder Area)	0	3,766	4,669	55	73	175	0	175	21.5
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,092	2,700	24	40	90	0	90	23.2
564.00	Unincorporated El Dorado County (Remainder Area)	0	1,035	1,213	24	27	62	0	62	16.6
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,173	2,327	52	69	143	0	143	15.2
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,929	3,985	140	112	264	5	269	14.6
567.00	Unincorporated El Dorado County (Remainder Area)	0	3,065	693	580	29	60	50	110	27.9
568.00	Unincorporated El Dorado County (Remainder Area)	0	2,929	755	551	26	61	47	108	27.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	6,998	1,995	1,081	72	169	96	265	26.4
570.00	Unincorporated El Dorado County (Remainder Area)	0	8,640	1,182	1,852	53	109	169	278	31.1
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,099	1,130	28	38	79	0	79	14.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	4,740	1,232	963	39	90	89	178	26.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	7,941	9,708	125	126	284	0	284	28.0
574.00	Unincorporated El Dorado County (Remainder Area)	0	4,395	5,588	54	88	204	1	205	21.5
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,799	4,034	21	37	86	0	86	32.7
576.00	Unincorporated El Dorado County (Remainder Area)	0	2,739	856	322	19	43	33	76	36.1
577.00	Unincorporated El Dorado County (Remainder Area)	0	528	635	8	14	32	0	32	16.7
578.00	Unincorporated El Dorado County (Remainder Area)	0	25,070	38,261	125	451	1,016	0	1,016	24.7
579.00	Unincorporated El Dorado County (Remainder Area)	0	2,784	4,027	21	41	96	0	96	29.0
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,452	3,329	26	42	98	0	98	24.9
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,778	7,019	39	66	146	0	146	32.7
582.00	Unincorporated El Dorado County (Remainder Area)	0	13,104	991	1,608	15	37	65	102	128.6
583.00	Unincorporated El Dorado County (Remainder Area)	0	30,996	46,668	291	446	987	15	1,002	30.9
584.00	Unincorporated El Dorado County (Remainder Area)	0	2,108	2,056	106	22	47	6	53	39.8
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,944	14,109	94	148	327	0	327	30.4
586.00	Unincorporated El Dorado County (Remainder Area)	0	3,737	2,867	259	56	105	10	115	32.5
587.00	Unincorporated El Dorado County (Remainder Area)	0	1,961	2,760	23	48	116	0	116	16.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	16,006	22,725	145	348	892	0	892	17.9
589.00	Unincorporated El Dorado County (Remainder Area)	0	240	290	6	8	16	0	16	15.0
590.00	Unincorporated El Dorado County (Remainder Area)	0	822	1,037	14	23	55	0	55	15.0
591.00	Unincorporated El Dorado County (Remainder Area)	0	67	87	1	3	7	0	7	9.4
592.00	Unincorporated El Dorado County (Remainder Area)	0	14,401	9,417	1,282	361	801	146	947	15.2
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,853	5,894	529	155	370	56	426	16.1
594.00	Unincorporated El Dorado County (Remainder Area)	0	11,302	15,065	163	316	754	0	754	15.0
595.00	Unincorporated El Dorado County (Remainder Area)	0	4,041	2,675	251	46	104	27	131	30.9
596.00	Unincorporated El Dorado County (Remainder Area)	0	5,261	3,067	494	59	151	48	199	26.4
597.00	Unincorporated El Dorado County (Remainder Area)	0	12,299	3,078	1,754	122	271	214	485	25.3
598.00	Unincorporated El Dorado County (Remainder Area)	0	8,753	388	1,442	15	33	166	200	43.8
599.00	Unincorporated El Dorado County (Remainder Area)	0	623	766	12	18	40	0	40	15.6
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,423	8,211	1,044	217	481	94	575	19.9

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,338	1,863	5	11	24	0	24	55.0
602.00	Unincorporated El Dorado County (Remainder Area)	0	1,849	116	235	3	6	9	15	126.4
603.00	Unincorporated El Dorado County (Remainder Area)	0	3,572	469	923	12	23	32	55	65.5
604.00	Unincorporated El Dorado County (Remainder Area)	0	3,262	633	449	17	31	13	44	74.5
605.00	Unincorporated El Dorado County (Remainder Area)	0	2,836	913	808	21	46	29	75	38.0
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,220	4,505	12	19	47	0	47	68.9
608.00	Unincorporated El Dorado County (Remainder Area)	0	30	41	0	1	2	0	2	13.8
609.00	Unincorporated El Dorado County (Remainder Area)	0	9,754	1,526	1,529	37	80	61	141	69.0
610.00	El Dorado Hills	0	60,769	138	28,171	0	0	2,725	2,725	22.3
611.00	El Dorado Hills	0	59,181	34,725	8,794	1,023	2,614	672	3,286	18.0
612.00	El Dorado Hills	0	128,597	1,051	62,339	0	0	5,778	5,778	22.3
613.00	Unincorporated El Dorado County (Remainder Area)	0	119	102	18	4	10	3	13	9.3
614.00	El Dorado Hills	0	6,273	7,403	137	211	550	0	550	11.4
615.00	El Dorado Hills	0	10,538	8,759	727	211	550	60	609	17.3
616.00	El Dorado Hills	0	1,566	1,856	33	53	138	0	138	11.3
617.00	El Dorado Hills	0	13,981	9,728	906	187	553	89	642	21.8
618.00	El Dorado Hills	0	4,697	0	2,133	0	0	265	265	17.7
619.00	El Dorado Hills	0	3,488	0	567	0	0	60	60	58.1
620.00	El Dorado Hills	0	17,491	3,731	1,587	0	0	178	178	98.3
621.00	El Dorado Hills	0	12,551	16,316	218	326	963	0	963	13.0
622.00	El Dorado Hills	0	19,292	18,024	1,115	370	1,094	90	1,184	16.3
623.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
624.00	El Dorado Hills	0	15,275	14,470	685	309	918	54	972	15.7
625.00	El Dorado Hills	0	182	0	105	0	0	12	12	15.2
626.00	Unincorporated El Dorado County (Remainder Area)	0	42,071	4,854	6,465	164	386	554	939	44.8
627.00	Unincorporated El Dorado County (Remainder Area)	0	59,560	0	11,048	0	0	966	966	61.6
628.00	Unincorporated El Dorado County (Remainder Area)	0	19,724	23,410	459	515	1,322	0	1,322	14.9
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	6,276	5,981	185	381	847	0	847	7.4
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,657	2,021	33	53	138	0	138	12.0
633.00	Unincorporated El Dorado County (Remainder Area)	0	7,018	8,409	150	211	550	0	550	12.8
634.00	Unincorporated El Dorado County (Remainder Area)	0	7,344	8,892	151	212	552	0	552	13.3
635.00	Unincorporated El Dorado County (Remainder Area)	0	3,602	4,358	72	106	276	0	276	13.0
636.00	Unincorporated El Dorado County (Remainder Area)	0	6,033	8,273	136	212	556	0	556	10.9
637.00	Unincorporated El Dorado County (Remainder Area)	0	9,439	11,533	188	265	695	0	695	13.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,269	1,586	22	36	94	0	94	13.4
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,731	3,337	52	72	189	0	189	14.5
640.00	Unincorporated El Dorado County (Remainder Area)	0	9,530	11,811	184	272	713	0	713	13.4
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,757	3,401	52	72	189	0	189	14.6
642.00	Unincorporated El Dorado County (Remainder Area)	0	36,457	38,355	1,587	926	2,421	96	2,517	14.5
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,271	11,487	181	257	672	0	672	13.8
644.00	Unincorporated El Dorado County (Remainder Area)	0	3,070	3,871	55	90	238	0	238	12.9
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,125	24,897	915	495	1,311	56	1,367	15.5
646.00	Unincorporated El Dorado County (Remainder Area)	0	7,078	8,856	124	180	477	0	477	14.9
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,496	1,879	26	45	119	0	119	12.6
648.00	Unincorporated El Dorado County (Remainder Area)	0	3,878	2,212	513	45	119	42	161	24.1
649.00	Unincorporated El Dorado County (Remainder Area)	0	4,693	2,826	29	45	119	0	119	39.4
650.00	Outside of County	0	2,923,045	1,492,985	485,017	0	0	0	0	-
651.00	Outside of County	0	29,899	17,035	4,083	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	418,190	187,854	51,322	0	0	0	0	-
654.00	Outside of County	0	41,840	9,389	2,402	0	0	0	0	-
655.00	Outside of County	0	353,211	120,197	33,946	0	0	0	0	-
656.00	Outside of County	0	56,414	18,662	7,083	0	0	0	0	-
657.00	Outside of County	0	196,539	9,077	3,578	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	5,732	3,008	929	0	0	0	0	-
660.00	Outside of County	0	181,639	101,837	33,495	0	0	0	0	-
661.00	Outside of County	0	148,611	79,005	24,375	0	0	0	0	-
662.00	Outside of County	0	710,868	374,372	120,909	0	0	0	0	-
663.00	Outside of County	0	734,778	259,940	80,418	0	0	0	0	-
664.00	Outside of County	0	452,102	247,211	66,140	0	0	0	0	-
665.00	Outside of County	0	221,284	97,434	35,913	0	0	0	0	-
666.00	Outside of County	0	102,333	56,627	17,239	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	535,699	362,051	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	203,275	110,582	30,497	0	0	0	0	-
672.00	Outside of County	0	38,797	38,920	0	0	0	0	0	-
673.00	Outside of County	0	33,719	16,724	0	0	0	0	0	-
674.00	Outside of County	0	405,093	27,679	0	0	0	0	0	-

Traffic Impact Study – Final Report

for Dorado Oaks



in El Dorado County, CA

March 20, 2021

Prepared in accordance with study guidelines set forth by:

Prepared by:

PRISM ENGINEERING

Traffic Engineering & Transportation Planning

This report has been prepared and certified by Grant P. Johnson, TE, Principal

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I. EXECUTIVE SUMMARY

This report analyzed short term and long term scenarios for the proposed Dorado Oaks residential development, consistent with the requirements found in El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*. The "with and without project" scenario analysis results are summarized in several tables and graphics in the body of this report, and duplicated in this section for convenience. The study area consisted primarily of the Missouri Flat corridor from Pleasant Valley Road to the US 50 freeway interchange, as well as Pleasant Valley Road at SR 49 (south) to Fowler Lane/SR 49 on the east. There is a total of nineteen (19) intersections analyzed in the study area, two of which are future intersections of the programmed Diamond Springs Parkway, which would connect Missouri Flat Road just north of China Garden Road easterly to SR 49 just south of Bradley Drive. Figure 2 in the next section shows where these study intersections are located.

Year 2018 Existing Conditions, with and without the Project

The project's trip generation is summarized in Table ES.1 which shows that in the pm peak hour there would be 274 trip ends, with 177 inbound to the project and 97 outbound from the project site.

Table ES.1 Project Trip Generation

		Trip Rates			Directionality					TRIP ENDS			Directionality			
Description/ITE Code	Units	Week day	AM	PM	AM In	AM Out	PM In	PM Out	Dwelling Units	Daily	AM	PM	AM In	AM Out	PM In	PM Out
Single Family Homes (ITE Landuse Code: 210)	DU	9.52	0.75	1.00	25%	75%	63%	37%	157	1495	118	157	29	88	99	58
Condo / Townhouse (ITE Landuse Code: 230)	DU	5.81	0.44	0.52	17%	83%	67%	33%	225	1307	99	117	17	82	78	39
									382	2802	217	274	46	170	177	97

Source: ITE Trip Generation Manual, 9th ed.

This trip generation was assigned to the surrounding roads. The existing Year 2018 level of service at all study intersections without the project is at an acceptable LOS E or better conditions, with a range of LOS A to LOS E conditions for the overall level of service at any intersection. The side street level of service at unsignalized intersections ranged from LOS C to LOS D, with LOS D side street conditions at the intersection of Missouri Flat Road and China Garden Road. Per El Dorado County Policy TC-Xa Missouri Flat Road is allowed to operate at LOS F provided ratios of volume to capacity do not exceed 1.12 from US Highway 50 to Motherlode Drive or 1.20 from Motherlode Drive to China Garden Road.

Table ES.2 summarizes the capacity analysis calculations for the Year 2018 scenarios, with and without the project. It can be seen from the table that when the project traffic is added in, the Pleasant Valley Road / Faith Lane (Intersection #11) goes from LOS E to LOS F conditions for the Faith Lane approach (side street). This is a significant impact requiring mitigation. The project did not significantly change the level of service at any of the other 14 existing study intersections, therefore, the project is required only to mitigate the one intersection for the Existing plus Project condition base on intersection level of service. Mitigation is done by payment of TIM fees, and construction of a roundabout at Faith Lane and SR 49.

Table ES.2 Year 2018 Unmitigated Capacity Analysis Summary

	INTERSECTION LOCATION	Control	YEAR 2018 AM Peak				YEAR 2018 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	20.3	C	20.7	C	27.4	C	28.7
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.9	B	15.9	B	18.3	B	18.3
3	Missouri Flat Rd at US 50 EB Ramps	S	B	16.6	B	16.6	C	24.6	C	24.6
4	Missouri Flat Rd at Mother Lode Dr	S	A	9.0	A	9.1	C	22.0	C	22.0
5	Missouri Flat Rd at Forni Rd	S	C	20.5	C	23.5	C	26.0	C	26.0
6	Missouri Flat Rd at Golden Center Dr	S	C	28.9	C	28.9	C	25.6	C	25.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.8	A	3.1	A	2.3	A	2.4
		WB	D	25.5	D	31.8	C	22.5	D	26.2
8	Missouri Flat Rd at Industrial Dr	S	A	3.6	A	3.7	B	10.6	B	11.5
9	Missouri Flat Rd at Enterprise Dr	S	A	4.7	A	4.9	B	15.1	B	15.1
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	13.9	B	15.2	C	28.1	D	42.5
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	8.4	A	0.5	B	13.5
		NB	C	17.1	F	84.1	E	47.9	F	254
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.3	A	0.3	A	0.8	A	0.8
		SB	C	20.2	C	20.3	D	29.5	D	30.3
13	Pleasant Valley Rd at SR 49 N / Fowler	S	E	62.3	E	62.3	D	41.1	D	45.1
14	Pleasant Valley Rd at Commerce Way	TW	A	1.4	A	1.4	A	2.8	A	2.8
		SB	C	21.5	C	21.6	C	23.5	C	23.9
15	Pleasant Valley Rd at Patterson Dr	S	A	6.5	A	7.0	A	7.6	A	8.5
16	Pleasant Valley Rd at Forni Rd	TW	A	4.3	A	4.4	A	3.8	A	3.9
		SB	C	21.2	C	22.0	C	15.1	C	15.5
17	Pleasant Valley Rd at SR 49 S	AW	E	44.2	E	45.9	C	22.3	C	24.0
18	Diamond Springs Parkway at SR 49		Future		Future		Future		Future	
19	Diamond Springs Pkwy at Missouri Flat									

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Future Conditions (Year 2027 and Year 2035).

The background traffic for these two future scenarios was increased by an average of 0.7% per year according to the growth rates obtained from the County's travel demand models for Year 2010 and 2035 conditions (detailed description and table of this process is in the Analysis section of this report). On Missouri Flat Road this yearly growth rate was higher at about 1.6% per year. On the average in the study area, there would be an additional 13% growth on top of existing traffic yielding Year 2035 traffic levels consistent with the County's travel demand model. The growth on Missouri Flat Road north and south of Forni Road, however, was much higher ranging from 25-28%. These differences were applied to various study area roadways as defined in Table 13 documented in Section V of this report. Table ES.3 shows the unmitigated Capacity Analysis Summary for the future condition, Year 2027. Table ES.3 shows the unmitigated Capacity Analysis Summary for the worst-case future condition, Year 2035.

Table ES.3 Year 2027 Mitigated Capacity Analysis Summary

	INTERSECTION LOCATION	Control	YEAR 2027 AM Peak				YEAR 2027 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	20.8	C	21.7	C	28.4	C	32.7
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.8	B	15.8	B	17.3	B	17.4
3	Missouri Flat Rd at US 50 EB Ramps	S	B	17.4	B	17.4	C	21.9	C	23.9
4	Missouri Flat Rd at Mother Lode Dr	S	A	9.5	A	9.8	B	15.6	B	15.6
5	Missouri Flat Rd at Forni Rd	S	C	23.7	C	25.3	C	33.1	D	37.5
6	Missouri Flat Rd at Golden Center Dr	S	C	31.5	C	31.5	C	31.1	D	50.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.2	A	2.2	A	2.0	A	2.0
		WB	C	15.7	C	18.2	C	20.2	C	22.8
8	Missouri Flat Rd at Industrial Dr	S	A	4.1	A	4.3	A	6.6	A	8.6
9	Missouri Flat Rd at Enterprise Dr	S	A	3.7	A	4.5	A	8.1	A	8.9
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	12.9	B	13.2	B	13.9	C	24.4
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	5.4	A	0.4	B	10.5
		NB	C	15.4	E	48.1	E	41.7	F	191
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.3	A	0.3	A	0.7	A	0.7
		SB	C	16.0	C	16.1	D	25.8	D	26.7
13	Pleasant Valley Rd at SR 49 N / Fowler	S	B	14.5	B	15.5	C	21.5	C	21.5
14	Pleasant Valley Rd at Commerce Way	TW	A	1.5	A	1.5	A	3.1	A	3.1
		SB	C	23.5	C	23.5	D	26.3	D	26.5
15	Pleasant Valley Rd at Patterson Dr	S	A	7.5	A	8.1	A	7.4	A	7.4
16	Pleasant Valley Rd at Forni Rd	TW	A	4.9	A	5.0	A	4.1	A	4.1
		SB	D	25.1	D	26.2	C	16.3	C	16.8
17	Pleasant Valley Rd at SR 49 S	AW	F	56.7	F	58.9	D	28.4	D	31.0
18	Diamond Springs Parkway at SR 49	S	B	11.0	B	11.3	B	12.3	B	12.9
19	Diamond Springs Pkwy at Missouri Flat	S	B	15.2	B	15.2	B	17.3	B	19.1

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Table ES.4 Year 2035 Mitigated Capacity Analysis Summary

	INTERSECTION LOCATION	Control	YEAR 2035 AM Peak				YEAR 2035 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	21.7	C	21.7	D	46.6	D	46.6
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.9	B	15.9	C	25.5	C	34.2
3	Missouri Flat Rd at US 50 EB Ramps	S	B	14.2	B	18.0	C	30.3	D	39.0
4	Missouri Flat Rd at Mother Lode Dr	S	B	10.5	B	10.8	B	14.3	B	16.3
5	Missouri Flat Rd at Forni Rd	S	C	29.9	C	30.2	C	34.2	D	49.4
6	Missouri Flat Rd at Golden Center Dr	S	C	28.8	C	31.0	D	48.6	D	48.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.2	A	2.3	A	1.9	A	1.9
		WB	C	18.3	C	21.8	C	18.9	C	21.1
8	Missouri Flat Rd at Industrial Dr	S	A	4.1	A	7.9	A	2.6	A	4.5
9	Missouri Flat Rd at Enterprise Dr	S	A	4.6	A	6.0	A	3.7	A	3.7
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	14.4	B	19.6	B	13.8	C	22.9
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	6.8	A	0.4	A	8.3
		NB	C	16.3	F	65.2	E	36.6	F	142
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.4	A	0.4	A	0.7	A	0.7
		SB	C	18.4	C	18.5	C	23.6	C	24.3
13	Pleasant Valley Rd at SR 49 N / Fowler	S	B	18.8	C	22.7	C	33.5	D	37.9
14	Pleasant Valley Rd at Commerce Way	TW	A	1.7	A	1.7	A	3.5	A	3.6
		SB	D	25.9	D	26.0	D	29.9	D	30.3
15	Pleasant Valley Rd at Patterson Dr	S	A	8.1	A	8.1	A	7.8	A	8.0
16	Pleasant Valley Rd at Forni Rd	TW	A	5.5	A	5.7	A	4.5	A	4.5
		SB	D	30.1	D	32.0	C	18.2	C	18.8
17	Pleasant Valley Rd at SR 49 S	AW	F	76.1	F	78.8	E	37.8	E	41.1
18	Diamond Springs Parkway at SR 49	S	B	11.3	B	11.5	B	14.5	B	17.4
19	Diamond Springs Pkwy at Missouri Flat	S	B	16.5	B	17.6	C	33.9	C	33.9

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Conclusions

There are three different significant criteria in the County's Traffic Impact Study Guidelines, p.12 upon which conclusions in this report are based. These are: 1) LOS, 2) Queuing, and 3) SB 743 and 375. The first and foremost criteria is intersection level of service. Tables ES.2, Table ES.3, and Table ES.4 indicate that based on the outcome of an HCM 2010 level of service analysis for intersections, 17 out of 19 study intersection locations would be at acceptable levels of service for the year 2035. The exceptions are the following two intersections impacted by the project:

1) Pleasant Valley Road at Faith Lane: *LOS A (8.3) / LOS F (142)*
2) Pleasant Valley Road at SR 49 S: *LOS F (76.1) / LOS F (78.8)*

The intersection of Pleasant Valley Road at Faith Lane goes to LOS F conditions for the Faith Lane approach after the project traffic is added in, and is therefore a significant impact requiring mitigation. The intersection of Pleasant Valley Road and Faith Lane is not anticipated in the County's CIP, so the project would need to mitigate this impact. Since this intersection is very close (100 feet away) to the intersection of China Garden Road, it is not possible to mitigate the intersection of Faith Lane without looking at the bigger picture. For example, it is not easy to install a signal at these existing intersection locations without the widening of Pleasant Valley Road to make room for left turn pockets to turn into Faith Lane or into China Garden Road. This would require the installation of two close signals designed to operate at one system, and left turn pocket storage would be too short to be back-to-back. In other words, there would need to be two median lanes for each left turn pocket which could then only be 100 feet long each. This means that Pleasant Valley Road would need to be widened to at least a four-lane cross section for at least two hundred feet west of Faith lane and 200 feet east of China Garden Road to accommodate tapering of lanes back to a two-lane cross section. There is not current right of way to accomplish this idea without impacting numerous buildings directly fronting Pleasant Valley Road on several different properties (possibly more than 10 properties).

MITIGATION 1 -- China Garden Road and Faith Lane on Pleasant Valley Road with a Modern Roundabout: Figure ES.1 shows a concept roundabout that would fit within existing right of way for three of its four approaches, but needing the additional right-of-way from one piece of property on the southeast quadrant of the intersection of Pleasant Valley Road and Faith Lane, and Faith Lane would be realigned to meet the circle. In this roundabout intersection, China Garden Road and Faith Lane are combined into the same modern roundabout intersection as shown in Figure ES.1.

MITIGATION 2 – Pleasant Valley Road at SR 49 South: This intersection goes to LOS F conditions without the project in the Year 2027 am peak hour scenario (also for Year 2035), and the project traffic only slightly increases delay by less than 3 seconds. This intersection is at LOS E conditions for the Year 2018 in the am peak hour (76.1 to 78.8 seconds). The project should pay its fair share towards signalization of this intersection as anticipated in the County's CIP, by paying into the County's traffic mitigation fee program based on trip generation of the project. A signal is warranted for existing conditions traffic without the project. Mitigation can be accomplished by lane widening resulting in satisfactory LOS D or better conditions, or by installing a traffic signal (LOS B conditions).

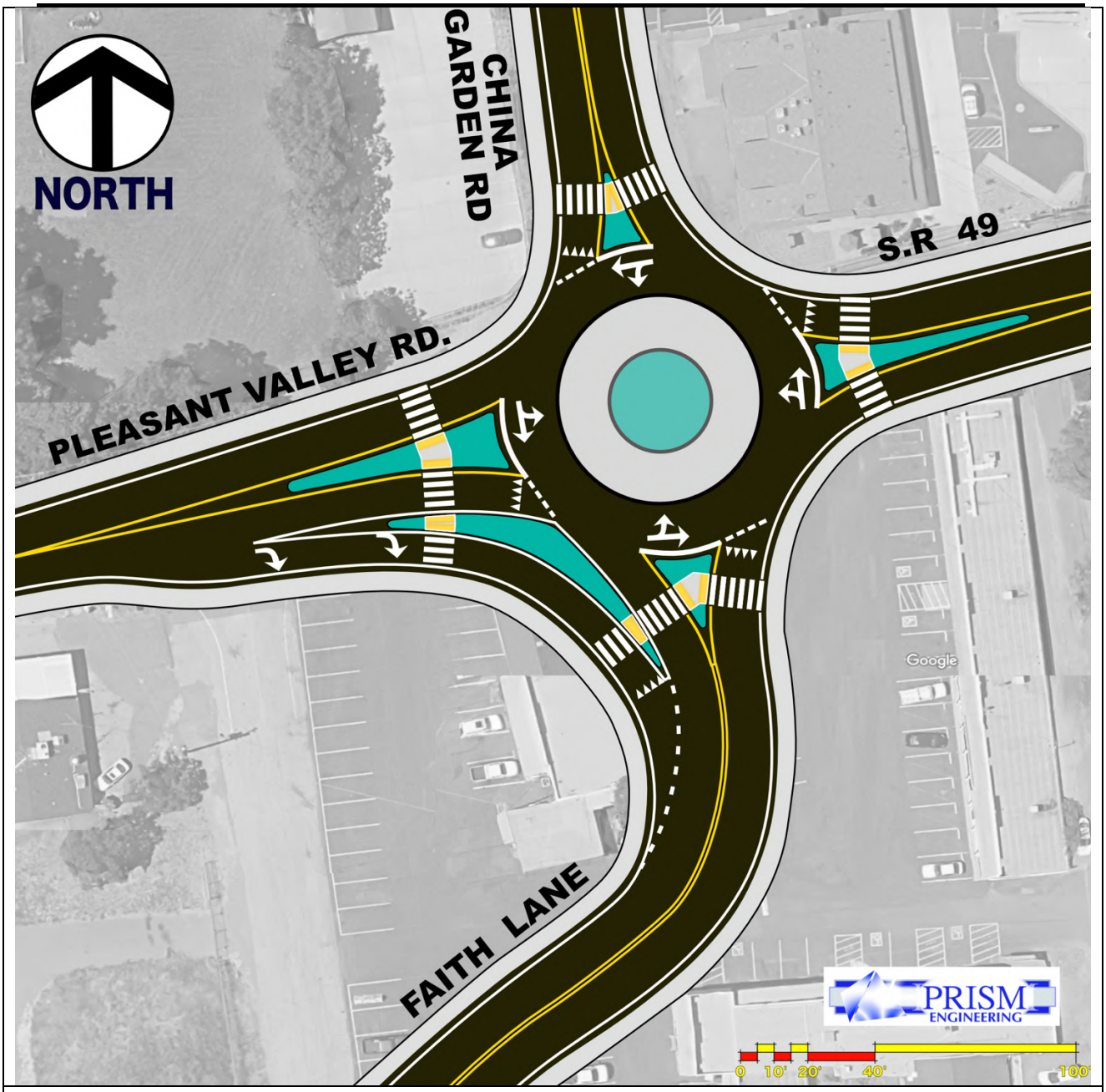
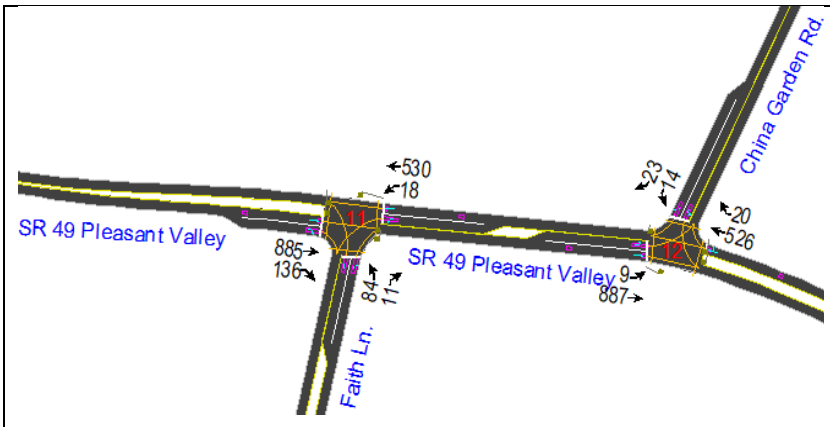


Figure ES.1 Roundabout Concept and Mitigation, Source: PRISM Engineering

This roundabout conceptual design has been analyzed as shown, and will operate at LOS C conditions ranging from 19-21 seconds of average delay for Year 2035 conditions (am or pm). This is a significant improvement over the existing conditions along Pleasant Valley Road in this vicinity, and also provides several safety factors (no left turn conflicts, slower yield on entry movements, traffic calming at 15-20 mph speeds). It is also compatible with Caltrans' vision of active transportation alternatives for the SR 49 corridor in this vicinity (from Patterson Drive to Faith Lane). The roundabout as shown with sidewalks and crosswalks is compatible with bike and pedestrian facilities, and significantly improves safety and access for pedestrians and bikes over the existing condition. Microsimulation analysis of this corridor with this

roundabout in place showed Year 2018-2035 traffic volumes passing through with no significant queues for roundabout approaches. Most of the simulation showed no queues at all. More specifics on roundabout analyses documentation can be found in the appendix.

Alternative Mitigation: Two Signalized Intersections. As an alternative intersection configuration to the proposed roundabout, a new signalized intersection and access could be developed for the existing Silver Drive intersection with Pleasant Valley Road. Faith Lane is only 150 feet away from China Garden Road. Silver Lane is 400 feet away from China Garden Road. By abandoning the existing Faith Lane intersection and realigning Faith Lane to become Silver Drive, a newer upgraded signalized intersection can be developed at Pleasant Valley Road and Silver Drive. The distance between intersections would allow for ample storage and would even make it possible for the intersections to operate independently as needed based on traffic demand (lessening delays), or coordinated if traffic flows are busy. This alternative would allow for left turn pocket storage of up to 150 feet for each intersection, making it possible to have longer signal cycles on Pleasant Valley Road through movements (longer phases) without spill over from the left turn pockets. However, the road-width right-of-way constraints along Pleasant Valley Road between Silver Drive and Faith Lane, are significant. There needs to be enough room for a three-lane cross-section of road, sidewalks, etc., plus distance for transitioning back to two lanes. This will be very difficult to accomplish east of China Garden Road where historical buildings now exist right up to the edge of the road, and widening of Pleasant Valley Road in this section is not very feasible. This alternative would also require acquisition of property to the west of Silver Drive to allow for transitioning of through lanes to make room for left turn pockets. This would require the acquisition of property to the east of existing Silver Drive all the way to China Garden Road to make room for the additional middle lane to accommodate the left turn pocket and eventual realignment of the EB through lane on Pleasant Valley Road to transition back to a two lane cross section. The intersection at Silver Drive is about 230 feet to the west of Faith Lane, and because of the 400 foot distance between Silver Drive and China Garden Road, would allow for sufficient left turn pocket storage to each of these intersections. The resulting level of service for these two new signalized intersections would be LOS B at Faith Lane / Pleasant Valley (realigned to the Silver Drive location), and LOS A at China Garden Road / Pleasant Valley. Figure ES.2 shows the dual traffic signal concept at this location. Signal cycle times would be approximately 70-90 seconds at peak times, or longer if longer phase times are given to Pleasant Valley Road through movements. Figure ES.2 shows the concept of this mitigation, along with Year 2035 plus project pm peak hour volumes and lane configurations.



The left turn volumes are very low (22 vph into Faith Lane and 9 vph into China Garden Road), and do not need long left turn pocket storage. The proposed left turn pockets shown are about 125' long each, back to back. The EB through lane on Pleasant Valley would need to be slightly realigned to make room for the median.

Figure ES.2 Two Signals Concept Mitigation, LOS A and LOS A result for Year 2035 PM Peak

This mitigation concept would require acquisition of property on the south side of Pleasant Valley Road between Silver Drive (Faith Lane realigned) and China Garden Road. The main constraint of this alternative is the need for a significant length of right-of-way on the south side of Pleasant Valley Road just west of Silver Drive to China Garden Road. Making this work at China Garden Road is complex because of historical buildings and limited available right-of-way.

Mitigation Recommendations for Pleasant Valley Road

(based on Field Observations of LOS C to LOS D Free-flow Conditions)

PRISM Engineering's observations of Pleasant Valley Road through traffic and subsequent observations of our video record of pm peak hour traffic flows including measuring of speeds, does not indicate that there is currently an LOS E or LOS F condition as shown by the Table 10 summary. This is true for side streets such as Faith Lane and China Garden Road, but for the through traffic on Pleasant Valley Road the flow appears to be at LOS C / LOS D conditions given the spacing in vehicle traffic (2-3 second headways), the speed of traffic, etc. Traffic is free flowing in both directions at or near the posted speed limit of 35 mph with some slowing to 25 mph in the eastbound direction after dark near Faith Lane. PRISM Engineering's view is that the traffic condition on Pleasant Valley Road does not warrant widening it to four lanes, but local traffic flows and access to and from side streets will benefit from making a modification to the existing traffic control situations at Faith Lane and China Garden Road. In the future Year 2035 condition with the project, the total volume on Pleasant Valley Road will be 1,655 vph. Year 2035 volumes without the project will be 1,435 vph. The microsimulation SimTraffic models of this corridor using these volumes do not show any significant queueing or slowing on SR 49. However, in order for the project traffic to adequately access Pleasant Valley Road /SR 49 at Faith Lane it will be necessary to mitigate these two intersections in the immediate vicinity of Faith Lane.

It has been recommended that a modern roundabout be installed on Pleasant Valley Road at China Garden Road (as shown in Figure ES.1), with Faith Lane being realigned to meet this same roundabout. A less desirable alternative would be to place the roundabout at Faith Lane, but it would have only three approaches to the roundabout. Existing development on the southwest corner would need to be removed. China Garden Road could not be a part of the roundabout (can't connect to the circle), and would need to be configured as a "right-in" / "right-out" street with no left turns in or out (a median would be needed). For this reason, this alternative is not recommended, but rather to modify the situation on the south side of the China Garden Road / Pleasant Valley Road intersection instead, by moving or modifying the historical buildings there to make sufficient room for the four legged roundabout. Even with traffic signals this same property would be impacted by a needed widening of Pleasant Valley Road on the south side to make room for an additional lane and median. The historical building at the intersection of China Garden Road and Pleasant Valley Road will be impacted no matter which alternative is selected in the future, unless China Garden Road is closed off to anything more than right in and right out movements.

The roundabout alternative shown in Figure ES.1 will result in LOS C conditions even for Year 2035 volumes with the full project, and will serve as a major mitigation to collector street access to and from Pleasant Valley Road, especially for fixing the projected LOS F conditions on Pleasant Valley Road between Silver Drive, Faith Lane, and China Garden Road. Note that the roundabout has a dedicated bypass lane for the EB right turn movement in to the project. This greatly improves the level of service and reduces any delays to through traffic on Pleasant Valley Road. With LOS C access for each of these side streets, the corridor will have been successfully mitigated from an LOS F condition to LOS C, for any of the analysis years once the roundabout is built.

Intersection Turn Pocket Queues

The County's Traffic Impact Study Guidelines states that it is necessary to use the SimTraffic software to analyze traffic operations when the following conditions exist (or could exist in the future): "Over-capacity conditions (queues spill out of storage pockets)." PRISM Engineering used this software to analyze intersection queues and found that for Year 2035, traffic the project has no significant impacts to queue overflow conditions, and in nearly all cases, adds at the most, one car length to a queue over the 95th percentile. No mitigations based on queue length overages are recommended.

II. BACKGROUND

PROJECT DESCRIPTION

PRISM Engineering was retained to prepare a traffic study for the proposed Dorado Oaks residential development located in the heart of the Diamond Springs community, within El Dorado County, CA. Table 1 shows the project parcels, collectively known as Dorado Oaks, are located along Faith Lane south of Pleasant Valley Road.

Table 1. Project Parcels and APN Information

Assessor's Parcel Numbers	Location
APN 054-402-18	South of Pleasant Valley Road
APN 329-301-15	South of Pleasant Valley Road
APN 329-301-20	South of Pleasant Valley Road
APN 329-310-10	South of Pleasant Valley Road
APN 329-310-11	South of Pleasant Valley Road
APN 329-310-12	South of Pleasant Valley Road

Figure 1 shows the location of the project site on a vicinity map approximately 2.5 miles south of the US 50 freeway and within the Diamond Springs Community. Also shown are the 19 study intersections considered in this report on Figure 2. The project consists generally of 382 residential dwelling units and a small neighborhood park within a 142.3 acre site. The project's 382 planned residential dwelling units are broken down as 156 single family residences, and 225 multi-family dwelling units (Condo / Townhouse) with two units per structure. The existing zoning for the project area consists of R1, R2, RE-10, C and RF as seen in Figure 3. The project remains consistent with the General Plan land use designations, being primarily residential in nature, and in providing open space areas and parks to net a number of residential dwelling units consistent with the existing zoning allowances. Table 2 details the Trip Generation of the Project.

Project Site Parking Review and Assessment of Site Plan:

The site plan map shown in Figure 3 shows varying widths of right-of-way for streets (according to the scale shown on the map) as being 60 feet of ROW for the Faith Lane corridor, 48 feet of ROW for streets "A Street" through "L Street", and 24 feet of ROW designated for shared and unnamed driveway/access roads within the "RH" and "RM" attached multi-family DU lot areas. In the RH/RM areas, a paved shared driveway is proposed, with garage storage for vehicles on the lot itself. On-street parking on these shared driveways will not be allowed. In the cases of the normal roadways on site with sidewalks, there will be adequate pavement width for safe two-way vehicle travel, on-street parking on both sides, and on Faith Lane only, room for 6 foot exclusively striped bike lanes in each direction (located between parking and travel lanes). Based on the 60 foot ROW width proposed on the project site plan, Faith Lane is adequate to meet the parking and bike lane requirements in the County's transportation policy elements, and as specifically defined in the following paragraph:

> **Eldorado County Policy TC-1w:** New streets and improvements to existing rural roads necessitated by new development shall be designed to minimize visual impacts, preserve rural character, and ensure neighborhood quality to the maximum extent possible consistent with the needs of emergency access, on street parking, and vehicular and pedestrian safety.

Streets "A Street" through "L Street" shown in the plan have a 48 foot ROW and with parking and sidewalks there is not enough room to also stripe bike lanes, but these non-collector residential roads do not need specific striped bike lanes but can be facilities where bikes and cars share the road. Typical cross section for these streets would be 36 feet of pavement from curb to curb accommodating two 7 foot parking widths on each side, and 22 feet of two-way travel area for vehicles and bikes (sharing the road), for a total of 36 feet. The remaining 12 feet can accommodate 6 foot sidewalks on each side.

The Federal Highway Administration (FHWA) publishes various modified AASHTO examples for roadway cross-sections that include bike lanes and on-street parking[1] in their ***Road Diet Information Guide***, as shown in "Figure 20" of that FHWA document in the footnote below. This illustration shows that a 60 foot right of way (as shown in the site plan) allows for accommodating each cross-section element when the travel lane widths are 12 feet each, bike lanes are 6 feet each, parking width on each side is 7 feet, yielding a curb-to-curb width of 50 feet. With 10 feet left over, 5 foot wide sidewalk or walking paths can also be constructed on each side. If the lane widths for travel are narrowed to 10 feet each, to potentially slow speeds, then an additional 4 feet of cross-section width can go towards sidewalk width, yielding about 7 feet of walking width on each side of the road (behind curb face), even when there is on-street parking.

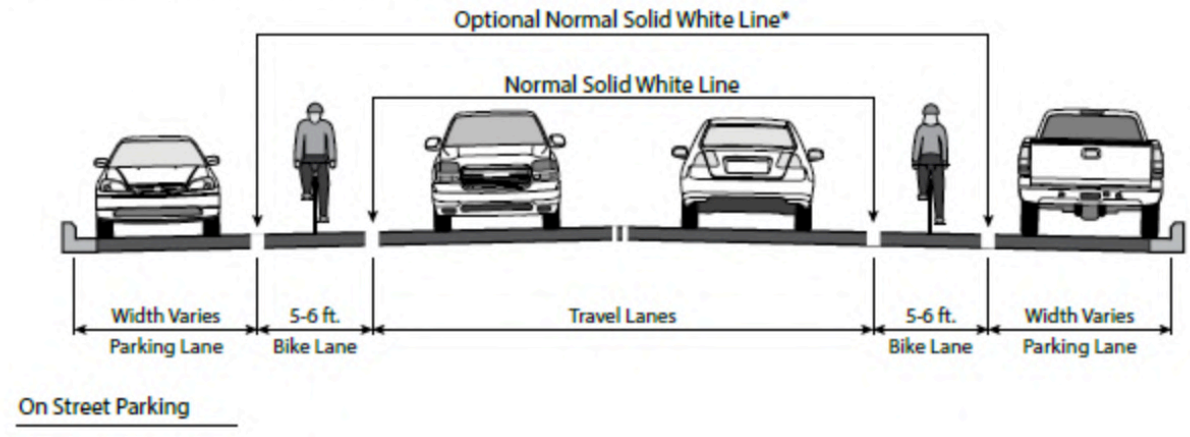
Based on these project site roadway facilities having room for bike lanes, on-street parking, and sidewalks for pedestrians, the parking, safety, and circulation needs for vehicles, bikes, and peds are adequately met in the project site plan as follows:

- On-street parking is possible on both sides of Faith Lane and streets "A Street" through "L Street"
- Bike lanes are possible on both sides of Faith Lane
- Sidewalks are possible on both sides of all residential and collector streets

The project site shown in Figure 3 has four primary access points as follows: 1) from Faith Lane south of Pleasant Valley Road, 2) to Argonaut/Patterson on the west, 3) to Tullis Mine Road via D Street, and 4) to Fowler Lane on the east via A Street.

[1] *FOOTNOTE from FHWA ROAD DIET INFORMATIONAL GUIDE, Chapter 4*:

Figure 20. Typical Bike Lane Cross Sections



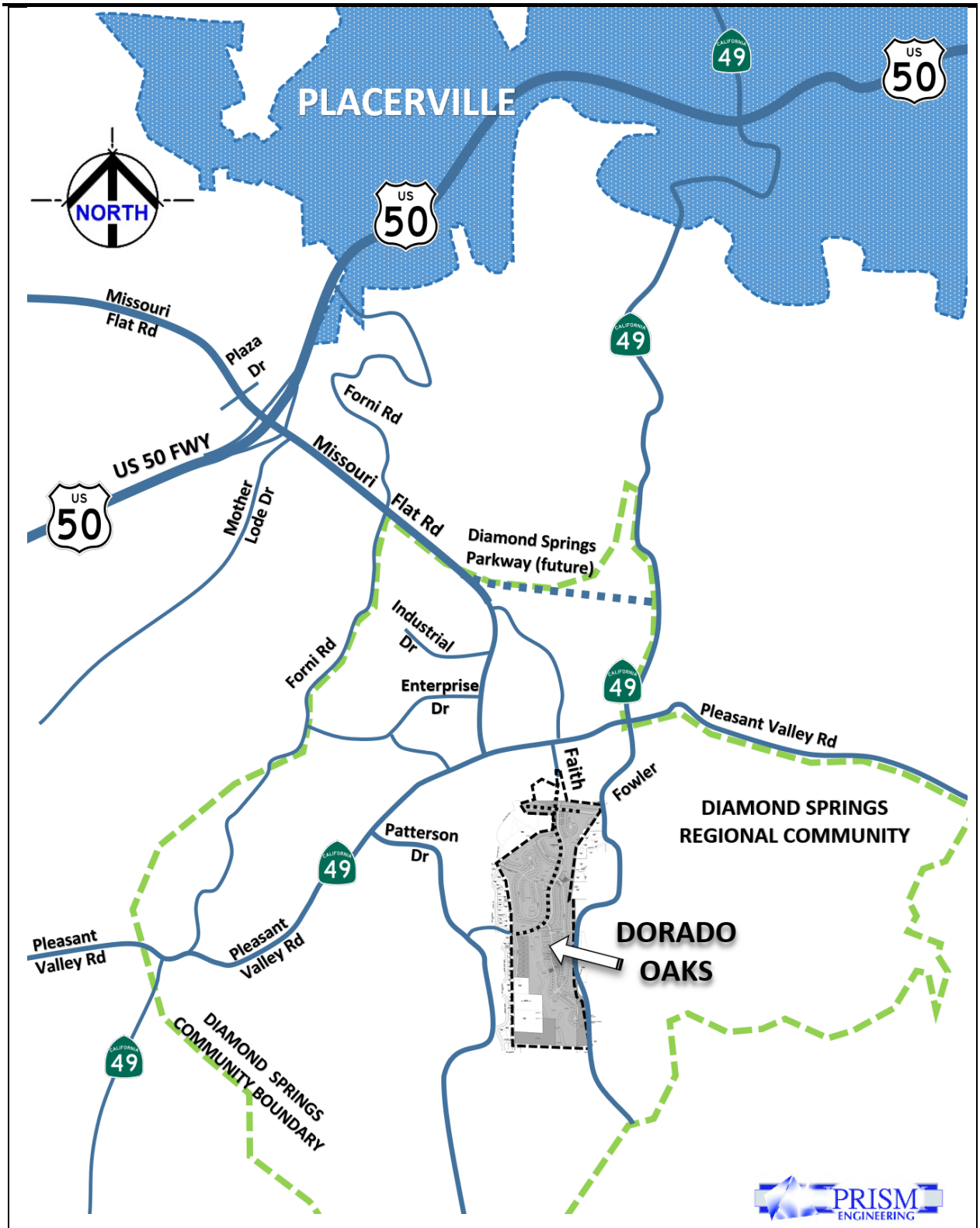


Figure 1 Vicinity Map and Project Site Location

Source: PRISM Engineering

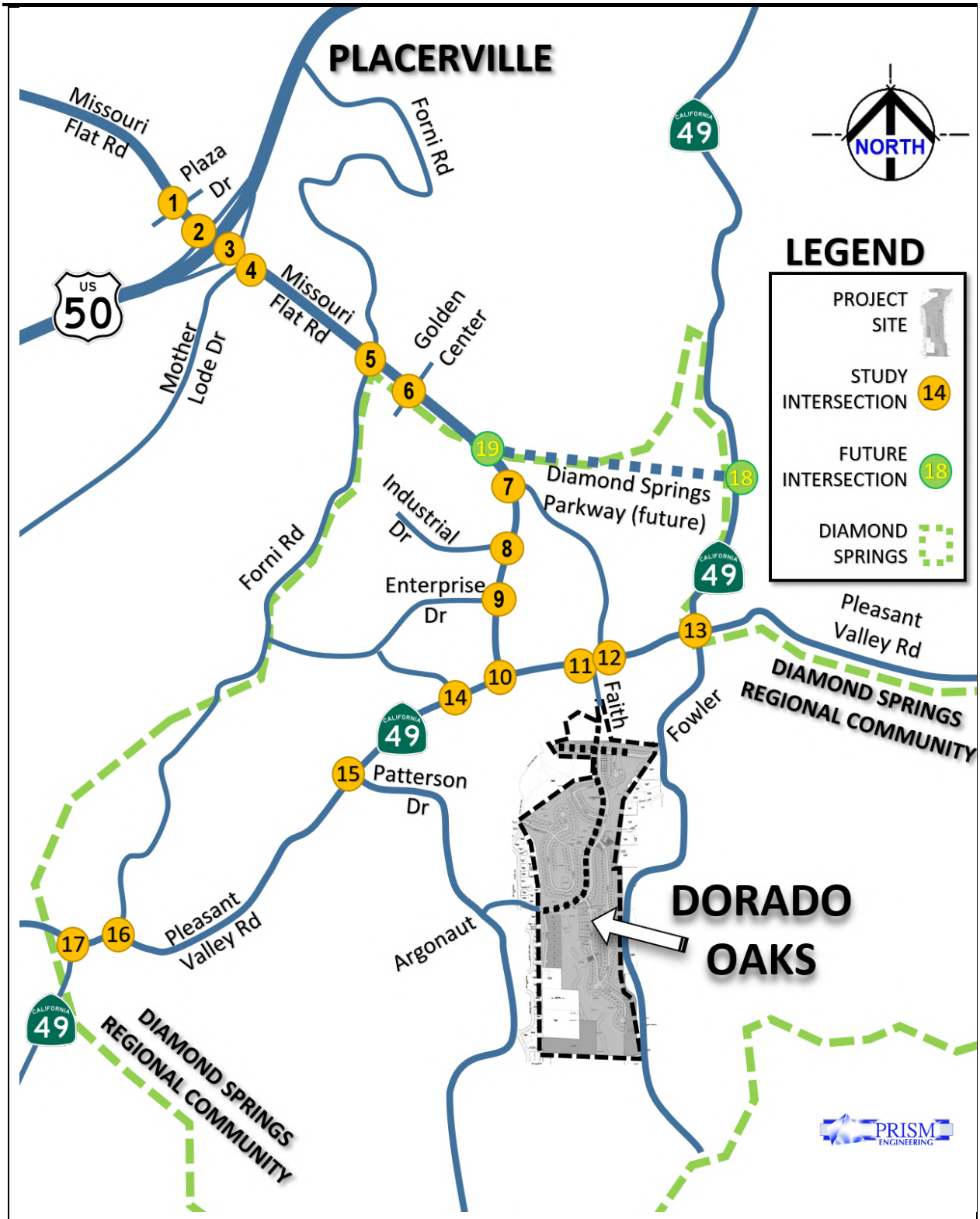


Figure 2 Project Site Location and Study Intersections

Source: PRISM Engineering

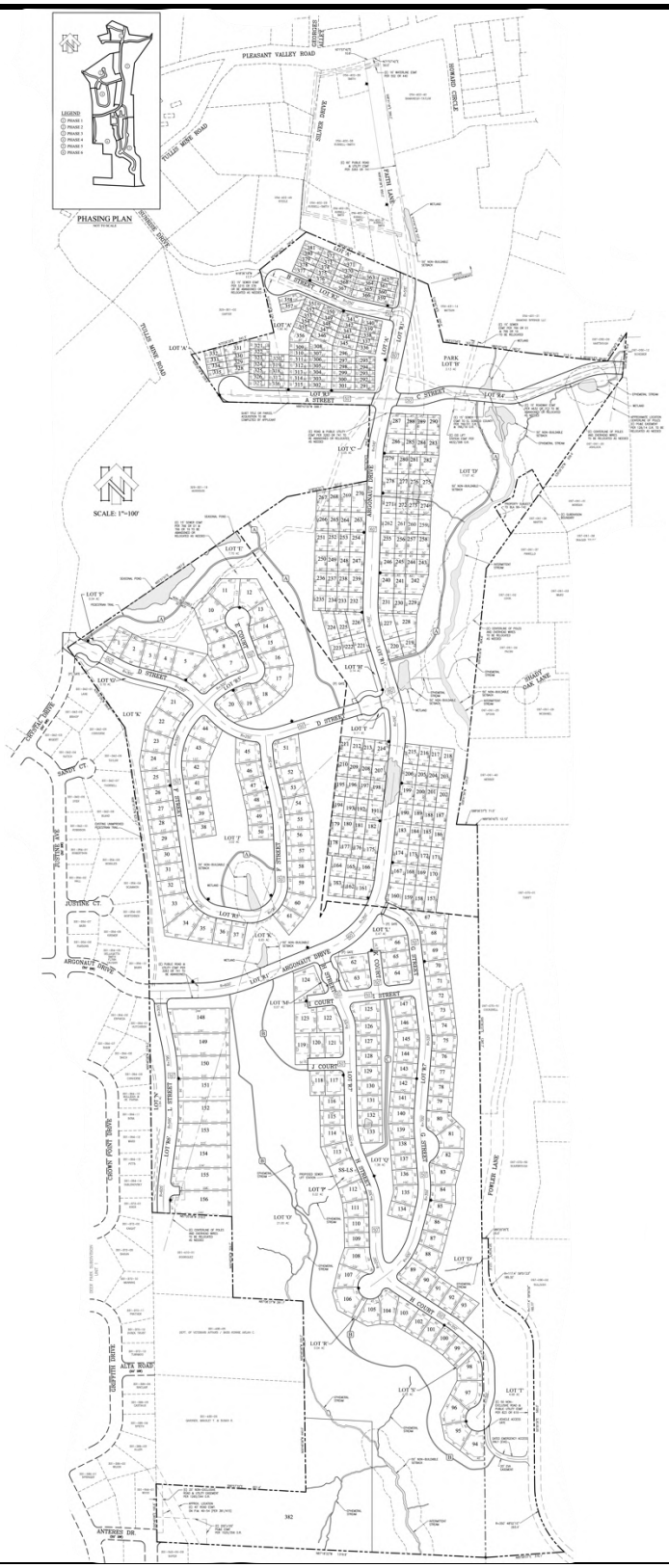


Figure 3 Proposed Project Site

Source: Dorado Oaks Development Team

This report evaluates the trip generation and resulting traffic impacts from the project site within the context of existing and future scenarios as follows:

1. Year 2018 Conditions for both the AM and PM Peak Hour
2. Year 2018 plus Project Conditions, AM, PM
3. Year 2027 Conditions, AM, PM
4. Year 2027 plus Project, AM, PM
5. Year 2035 Conditions, AM, PM
6. Year 2035 plus Project Conditions, AM, PM

Table 2. Dorado Oaks Project Trip Generation

		Trip Rates			Directionality					TRIP ENDS			Directionality			
Description/ITE Code	Units	Week day	AM	PM	AM In	AM Out	PM In	PM Out	Dwelling Units	Daily	AM	PM	AM In	AM Out	PM In	PM Out
Single Family Homes (ITE Landuse Code: 210)	DU	9.52	0.75	1.00	25%	75%	63%	37%	157	1495	118	157	29	88	99	58
Condo / Townhouse (ITE Landuse Code: 230)	DU	5.81	0.44	0.52	17%	83%	67%	33%	225	1307	99	117	17	82	78	39
									382	2802	217	274	46	170	177	97

Source: ITE Trip Generation Manual, 9th ed.

The Dorado Oaks project is expected to generate 217 am peak hour trip ends and 274 pm peak hour trip ends, with 177 inbound and 97 outbound in the pm peak hour as shown in the table above. This traffic was assigned to the surrounding roadway as defined later in this report.

The analysis of traffic in this report identifies intersections and road segments that are expected to have congestion and unsatisfactory traffic conditions in the future[2], determine if the project has made a significant impact towards these problems, and to develop and discuss mitigation measures that would solve the potential future traffic problems.

This traffic study scope and methodology was approved by the El Dorado County Community Development Agency, and this report follows the methodology and procedures outlined in the 2014 version of the *Transportation Impact Study Guidelines* document prepared by the Community Development Agency, Long Range Planning division.

STUDY AREA

PRISM Engineering received a scope of work from the County that defines the study area for the Project consisting of Missouri Flat Road starting at Plaza Drive on the north (just north of the US 50 freeway WB Ramps) to Pleasant Valley Road / SR 49 on the south terminus. In addition, Pleasant Valley Road was also studied beginning with its SR 49 (south) intersection on the west to its Fowler Lane / SR 49 (north) intersection on the east. The Missouri Flat Road study corridor is a 1.9 mile segment with 10 existing study

[2] Impacts are based upon the significance criteria set forth in the El Dorado County Traffic Study Guidelines.

intersections (and two future). The Pleasant Valley Road study corridor is a 2.2 mile segment with 7 additional existing study intersections. There was a total of 19 study intersections. 17 of these are existing and 2 are future study intersections as follows:

1. Missouri Flat Rd. at Plaza Dr.
2. Missouri Flat Rd. at US 50 WB Ramps
3. Missouri Flat Rd. at US 50 EB Ramps
4. Missouri Flat Rd. at Mother Lode Dr.
5. Missouri Flat Rd. at Forni Rd
6. Missouri Flat Rd. at Golden Center Dr.
7. Missouri Flat Rd. at China Garden Rd.
8. Missouri Flat Rd. at Industrial Dr.
9. Missouri Flat Rd. at Enterprise Dr.
10. Missouri Flat Rd. at Pleasant Valley Rd.
11. Pleasant Valley Rd. at Faith Ln.
12. Pleasant Valley Rd. at China Garden Rd.
13. Pleasant Valley Rd. at SR 49 N / Fowler
14. Pleasant Valley Rd. at Commerce Way
15. Pleasant Valley Rd. at Patterson Dr.
16. Pleasant Valley Rd. at Forni Rd.
17. Pleasant Valley Rd. at SR 49 South
18. Diamond Springs Parkway at SR 49 (future)
19. Diamond Springs Parkway at Missouri Flat Rd. (future)

These include all roads which are contiguous to the project site and which would connect the site into the local street system. For example, the project would connect on its west side into Argonaut which connects to Patterson Drive which connects to Pleasant Valley Road. The project would connect on its east side to Fowler Lane which connects to Pleasant Valley Road / SR 49. To the north of the site, it connects directly with Faith Lane which connects to Pleasant Valley Road just west of China Garden Road.

In addition, the US 50 mainline freeway operations were to be studied also in the vicinity where the Missouri Flat Road freeway on and off-ramps intersect the mainline freeway in order to determine the impact of the project on mainline freeway flows. The sections of US 50 freeway studied as a part of this report were from the El Dorado Road interchange on the west to the Forni Road interchange on the east, inclusive of the Missouri Flat Road interchange.

ANALYSIS METHODOLOGY

This report evaluates the trip generation and resulting traffic impacts from the project site within the context of existing and future scenarios as follows:

- Existing (2018) conditions unmitigated (identify any existing deficiencies) – Based on current traffic counts in 2018 and existing roadway geometry and traffic control.
- Existing (2018) plus Project conditions unmitigated (identify any existing deficiencies) – Based on current traffic counts in 2018 and existing roadway geometry and traffic control.
- Year 2027 Near-Term Base Traffic Condition (10 years out), unmitigated – Based on anticipated growth in baseline traffic volumes determined by straight-line interpolation between Year 2018 existing counts and Year 2035 traffic projections.

- Year 2027 Near-Term Base plus Project Traffic Condition (10 years out), unmitigated – Based on anticipated growth in baseline traffic volumes determined by straight-line interpolation between Year 2018 existing counts and Year 2035 traffic projections.
- Future Buildout Year Cumulative Long-Term (2035) Conditions, unmitigated – Based on 2035 future year traffic forecasts from the El Dorado County Demand Forecast model. Future year will correspond with approximate buildout of County's General Plan.
- Future Buildout Year Cumulative Long-Term (2035) Conditions, with Mitigation – Based on 2035 future year traffic forecasts from El Dorado County's Travel Demand Forecast model plus project. Future year will correspond with approximate buildout of County's General Plan.

The analysis of traffic in this report identifies intersections and road segments that are expected to have congestion and unsatisfactory traffic conditions in the future[3], determine if the project has made a significant impact towards these problems, and to develop and discuss mitigation measures that would solve the potential future traffic problems.

This traffic study scope and methodology was approved by the El Dorado County Community Development Agency, and this report follows the methodology and procedures outlined in the 2014 version of the *Transportation Impact Study Guidelines* document prepared by the Community Development Agency, Long Range Planning division.

Operating Conditions and Criteria for Intersections

Analysis of significant environmental impacts at intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions, and ranges from LOS A (best, minimal delay), to LOS F (worst, heavy delays) where the intersection is operating at or near its functional capacity. Levels of Service for this study were determined using the *Highway Capacity Manual, 2010* (HCM) methodologies which are implemented in the *Synchro* (Version 9) traffic analysis software[4] including SimTraffic micro-simulation. Table 3 relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections. In addition to using the HCM 2010 calculation methodology for unsignalized intersections in this study, PRISM Engineering utilized microsimulation level of service calculation for the four closely spaced signalized intersections along Missouri Flat Road in the immediate vicinity of the US 50 freeway (Plaza Drive, US 50 WB Ramps, US 50 EB Ramps, and Mother Lode Drive). Coordination of signals on Missouri Flat Road in the vicinity of the US 50 freeway was assumed and implemented in a SimTraffic microsimulation traffic model developed for this study. The HCM 2010 includes procedures for analyzing side-street two-way stop controlled (TWSC), all-way stop-controlled (AWSC), and signalized intersections. This ability to calculate LOS and delay is also built into the SimTraffic module of Synchro. The TWSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole,

[3] Impacts are based upon the significance criteria set forth in the El Dorado County Traffic Study Guidelines.
[4] The HCM 2010 methodology was used in this study for signalized and unsignalized intersections (TWSC and AWS). The HCM 2010 method only works under limited circumstances and will not calculate U-Turns for instance. PRISM Engineering used SimTraffic microsimulation for calculation of levels of service based on actual traffic operations because of the closely spaced intersections at the US 50 and Missouri Flat Road interchange (only 100-400' separations). The SimTraffic methods account for queues between intersections that can block traffic or significantly affect a closely spaced intersection.

or for individual approaches or even separate turning movements. For the purposes of this study, only intersection averages were summarized for each study intersection. For TWSC intersections, level of service is reported for the worst approach as well as for the intersection as a whole.

Table 3. Intersection Level of Service Definitions

Level of Service	Description	Avg. delay per vehicle, sec/veh	
		Signalized	Un-Signalized
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

Sources: Transportation Research Board, Highway Capacity Manual 2010, National Research Council, 2010.

Thresholds of Significance for Intersections and Segments

General Plan Policy TC-Xd states that "*Level of Service (LOS) for County maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions, or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2.*" A project's traffic impact at an intersection is considered to be significant under El Dorado County guidelines if the project causes an intersection to change from LOS E to LOS F. In other words, LOS E is considered acceptable by El Dorado County for roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Center and Rural Regions except as specified in the General Plan; the project is located within a Community Region. Worsening of conditions at facilities already operating at unacceptable levels of service is also considered a significant impact. The County's General Plan Policy TCXe defines worsen as any of the following conditions:

- a 2% increase in traffic during the a.m. peak hour, p.m. peak hour or daily trips, or
- the addition of 100 or more daily trips, or
- the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

When a project identifies an impact on the County's roadway network for a scenario with or without the project, a separate analysis must be done to identify what improvements are needed for mitigation and when the improvements must be in place. The timing of the proposed mitigation must be in compliance with General Plan Policy TC-Xf:

At the time of approval of the tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County's 10-year CIP. For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following:

(1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element; or
(2) ensure the construction of the necessary road improvements are included in the County's 20-year CIP.

Projects that have impacts to Caltrans facilities shall use Caltrans LOS standards and significance thresholds in conjunction with the requirements of El Dorado County General Plan Circulation Policy TC-Xd.

The effects of vehicle queuing were also analyzed and the 95th percentile queue is reported for all study intersections. The 95th percentile queue length represents a condition where 95 percent of the time during the peak period, traffic volumes and related queuing will be at, or less, than the queue length determined by the analysis. This is referred to as the "95th percentile queue." Average queuing is generally less. Queuing is considered a potentially significant impact since queues that exceed turn pocket length can create potentially hazardous conditions by blocking or disrupting through traffic in adjacent travel lanes. However, these potentially hazardous queues are typically associated with left-turn movements.

Locations where the right turn pocket storage is exceeded is not considered potentially hazardous because the right turn movement will go at the same time as the through movement and the additional vehicles that spill out over the turn pocket will not be hindering or disrupting the adjacent through traffic as would be the case in most left turn pockets.[5] Thus, for purposes of this analysis, a queuing impact is considered to occur under conditions where project traffic causes the queue in a left turn pocket to extend beyond the turn pocket by 25 feet or more (i.e., the length of one vehicle) into adjacent traffic lanes that operate (i.e., move) separately from the left turn lane. Where the vehicle queue already exceeds that turn pocket length under pre-project conditions, a project impact would occur if project traffic lengthens the queue by 25 feet or more.

[5] If a left turn movement operates (i.e. moves) at the same time as the through movement such as with split signal phasing, then a left turn queue that exceeds the turn storage is not considered an impact.

III. EXISTING CONDITIONS

Existing Street Network and Transportation Systems

Below is a description of the principal roadways and intersections included in this study.

ARTERIAL: Missouri Flat Road, LOS Range: LOS A to LOS C
This arterial roadway transitions from a three lane cross section to a six lane cross section and then back to a three lane cross section as follows: North of the Plaza Drive shopping centers Missouri Flat Road has a three lane cross section (center left turn lanes). Between Plaza Drive and Golden Center Drive Missouri Flat Road generally has a six lane cross section (two lanes in each direction with variations of left and right turn pockets, such as dual left turns at the freeway ramps). South of Golden Center Drive it transitions back to a three lane cross section generally with a two-way left turn lane in the center all the way past Enterprise Drive on the south. From this intersection, Missouri Flat transitions to its intersection configuration with Pleasant Valley Road (two southbound, a left and right turn pocket, and two northbound lanes from Pleasant Valley Road). In the future, this arterial roadway will see some relief from future traffic growth with the construction of the Diamond Springs Parkway planned to connect to Missouri Flat Road a few hundred feet north of China Garden Road. This future four lane parkway will carry about 1000 vph in the Year 2035 peak hour time period, traffic that may have had to otherwise travel on Pleasant Valley Road to Missouri Flat Road in order to access the US 50 freeway, etc.

INTERSECTION #1: Missouri Flat Road / Plaza Drive, LOS C Operations
This intersection has a coordinated traffic signal installation with the US 50 freeway ramps where its north and southbound movements coordinate with the north and southbound through movements of the WB Ramps intersection. The Missouri Flat Road approaches feature protected left turn phasing (dual left for SB approach), and a separate southbound right turn lane into Plaza Drive. There is split phasing between the east and westbound approaches of Plaza Drive.

INTERSECTION #2: Missouri Flat Road / Westbound US 50 ramps, LOS B Operations
This intersection has a coordinated traffic signal installation. The Missouri Flat Road approaches feature dual northbound left turn lanes and a separate southbound right turn lane. The four lane exit from US 50 is configured with a dual left turn lane and dual right turn lanes.

INTERSECTION #3: Missouri Flat Road / Eastbound US 50 ramps, LOS C Operations
This intersection has a coordinated traffic signal installation. The Missouri Flat Road approaches feature dual southbound left turn lanes and a separate northbound right turn lane. The three lane exit from US 50 is configured with a separate left turn lane and right turn lanes, as well as a combined left, thru and right turn lane.

INTERSECTION #4: Missouri Flat Road / Mother Lode Drive, LOS C Operations
This intersection is signalized and located roughly 250 feet from the Eastbound US 50 ramps intersection. The Missouri Flat Road approaches have separate left turn and right turn lanes. The eastbound Mother Lode Drive approach has three lanes configured as dual left turns and a separate right turn lane.

INTERSECTION #5: Missouri Flat Road / Forni Road, LOS C Operations
This intersection is also signalized and located roughly ½ mile south of the Mother Lode Drive intersection. The Missouri Flat Road approaches each include separate left turn and right turn lanes. The Forni Road

approaches have separate left turn, through and right turn lanes, and a second left turn lane has been provided on the eastbound approach.

INTERSECTION #6: Missouri Flat Road / Golden Center Drive, LOS C Operations
This intersection is located about 1,100 feet south of Forni Road. This signalized intersection includes separate left turn lanes on the Missouri Flat Road approaches and a separate right turn lane on the southbound approach. The Golden Center Drive approaches are single lanes which operate with permitted phasing.

INTERSECTION #7: Missouri Flat Road / China Garden Road, LOS A/D Operations
This intersection is located about 2,100 feet south of Golden Center Drive. This unsignalized intersection includes single lanes along Missouri Flat Road with a separate left turn lane on the southbound approach. A TWLTL is present on the northbound approach of Missouri Flat Road and north of the southbound left turn lane. The China Garden Road approach consists of a single lane which is stop controlled.

INTERSECTION #8: Missouri Flat Road / Industrial Drive, LOS B Operations
This intersection is located about 600 feet south of China Garden Road. In the Year 2020, this intersection is controlled by a traffic signal. The two-way left turn lane on Missouri Flat Road approaches are converted to a short left turn pocket at the intersection.

INTERSECTION #9: Missouri Flat Road / Enterprise Drive, LOS B Operations
This intersection is located about 850 feet south of China Garden Road. In the Year 2020, this intersection is controlled by a traffic signal. The two-way left turn lane on Missouri Flat Road approaches are converted to a short left turn pocket at the intersection.

INTERSECTION #10: Missouri Flat Road / Pleasant Valley Road, LOS C Operations
This intersection is signalized and operates at LOS B in the am and LOS C in the pm peak hour. The EB approach of Pleasant Valley Road has a dual left turn pocket and one EB through lane. The SB approach has a single left turn and a single right turn pocket. The WB approach has a single right turn pocket and a single WB through lane. This intersection will continue to operate at LOS C or better conditions beyond the Year 2035.

INTERSECTION #11: Pleasant Valley Road / Faith Lane, LOS A/E Operations
This three-approach intersection is unsignalized with stop sign control only for Faith Lane northbound approach, and no control for the EB and WB Pleasant Valley Road approaches. Faith Lane is at LOS C in the am peak hour and LOS E in the pm peak hour. When the project traffic is added in Faith Lane goes to LOS F in the am or pm peak hour, and Pleasant Valley climbs to LOS C. This intersection is only 150 feet away from China Garden Road, centerline to centerline.

INTERSECTION #12: Pleasant Valley Road / China Garden Road, LOS A/D Operations
This three-approach intersection is unsignalized with stop sign control only for China Garden Road southbound approach, and no control for the EB and WB Pleasant Valley Road approaches. China Garden Road is at LOS C in the am and LOS D in the pm peak hour. When the project traffic is added in the level of service remains the same. This intersection is only 150 feet away from Faith Lane, centerline to centerline.

INTERSECTION #13: Pleasant Valley Road / Fowler Lane (SR 49), LOS E Operations
This signalized intersection is operating at LOS E in the am peak hour and LOS D in the pm peak hour. It is flared locally to accommodate three lane approaches on Pleasant Valley Road in the east and westbound directions, but quickly tapers back to a two-lane road west and south of the intersection, and to a two-lane road with a two-way left turn lane in the median north and east of the intersection.

INTERSECTION #14: Pleasant Valley Road / Commerce Way, LOS A/C Operations
This unsignalized intersection is operating at LOS A overall, but LOS C for the southbound stop sign controlled approach. It is a three-way intersection, with a right turn pocket for the westbound approach only. The other southbound and eastbound approaches are single lane only.

INTERSECTION #15: Pleasant Valley Road / Patterson Drive, LOS A Operations
This signalized intersection is operating at LOS A conditions for the am and pm peak hour. The intersection has separate turn pockets for each of the northbound, westbound, and eastbound approaches, consisting of two total approach lanes for each approach. There are also eastbound and westbound bike lanes striped at this intersection for only the Pleasant Valley Road approaches. These bike lanes taper and disappear at approximately 600 feet west and east of this intersection.

INTERSECTION #16: Pleasant Valley Road / Forni Road, LOS A/C Operations
This unsignalized intersection is operating at LOS A overall, but LOS C for the southbound stop sign controlled approach. It is a three-way intersection, with signal lane approaches all around. Forni Road is the stop sign controlled approach and is at a sharp skewed angle approximately 45 degrees from Pleasant Valley Road. Making a left turn from Forni Road to Pleasant Valley Road is therefore difficult because of the angle.

INTERSECTION #17: Pleasant Valley Road / SR 49 (south), LOS E/F Operations
This unsignalized intersection is a three-way stop sign controlled location. A traffic signal is warranted here for existing conditions traffic. It operates at LOS E/F in the am and LOS C in the pm peak hour. However, the eastbound approach has enough room to stripe a separate right turn pocket without any road widening. The northbound approach of SR 49 does not have enough room for any additional lanes without capital improvement widening of the approach. The westbound approach of this intersection has two striped lanes, a WB through and a WB left turn pocket. All other approaches are currently configured as a single shared lane, however, vehicles are using the eastbound approach as two lanes, because there is a 20’ approach width, more than enough room for two vehicles side by side.

Existing Bicycle and Pedestrian Facilities

Sidewalks currently provide walking facilities along Missouri Flat Road in the vicinity of the US 50 freeway and towards the south just past Golden Center (south of the Walmart shopping center). After this point there are no sidewalks all the way down to Pleasant Valley Road. Pleasant Valley Road is without sidewalks in both east and westbound directions with few exceptions such as at the immediate vicinity of the signalized intersections at SR 49 / Fowler, as well as at Patterson Drive. Bike lanes, however, are striped throughout the study area along Missouri Flat Road north of Golden Center Drive, but generally not to the south of the location, or on Pleasant Valley Road (except in the immediate vicinity of Patterson Drive). The pavement width of Pleasant Valley Road is generally 24 feet from edge to edge.

Existing Transit Facilities

El Dorado Transit serves the Diamond Springs community south of Golden Center Drive via Bus Routes 30 and 35. At the Missouri Flat Transfer Center (located in front of the Walmart shopping center along Missouri Flat Road), there are six Bus Routes that interact at this location including 60 to Pollock Pines, 20 to Placerville, 30 to Diamond Springs, 50 to US 50, 25 for Saturday, and 35 for Diamond Springs on Saturday. Weekday and Saturday schedules to Diamond Springs are generally 1-hour headways between buses, running from 6 am to 6 pm.

Traffic Counts and Data Collection, Saturation Flow Rates

PRISM Engineering conducted am and pm peak hour turning movement counts at 16 existing study intersections, as well as 24 hour roadway counts in 15 minute intervals, explained in detail in Appendix Section A.3 of this report. All intersection turning movement counts were updated in 2018 with new traffic count data as explained in the appendix. Generally, the ADT traffic counts are approximately 10 times the peak hour value, typical in the study area.

Arterial Roadway Segment Analyses and Methodology

PRISM Engineering explored several methods to calculate the appropriate level of service for roadway segments (not intersections). These included HCM 2010 compatible methods built in to the:

1. SimTraffic microsimulation model *(incorporates all roadway cross-section details including Two-way Left Turn Lane (TWLTL) medians, posted speeds, lane capacities, all details of lane geometry and vehicle types in microsimulation, etc, which includes the effects on delay to a roadway segment from adjacent intersections, signal timings, etc. It looks at the bigger picture of a system of traffic intersections and segments)*
2. the HCS 7 two-lane/multilane highways modules *(cannot handle TWLTL for two lane highways which is critical to accurately analyze much of Missouri Flat Road; It is not a microsimulation model and cannot take into account a longer corridor of potential delays at adjacent intersections, etc It can simply incorporate directionality, speed limits, truck percentages, lane widths, etc)* This method was ruled out because of inability to calculate level of service for the specific cross-section on much of Missouri Flat Road where TWLTL is present (see Appendix A.5).
3. the County's generic "planning level" method *(where the only variables are total two-way volume and number of lanes in the cross-section; this limited method does not consider lane widths, vehicle speeds, or whether there are two-way left turn lanes (TWLTL), etc).*

The County has indicated that the most accurate software methods should be used to calculate the street segment level of service for Missouri Flat Road or Pleasant Valley Road, whether it be the HCM 2010 analysis methods found in the SimTraffic microsimulation model or whether it is the County's proprietary "planning level thresholds" method. The criteria would be whichever method best reflects real world conditions, in other words, whether the calculated levels of service comport to what is happening in the field by verification. As a result, PRISM Engineering conducted two analyses for all roadway segments, to illustrate and show the differing results, but also offer an explanation as to why there are differences. PRISM Engineering also observed traffic conditions and speeds in the field, along Missouri Flat Road and Pleasant Valley Road, and found that the SimTraffic microsimulation HCM 2010 analysis tool best represented existing conditions. The planning level analyses did not seem to be sensitive to overall conditions, but correlated with side street conditions, even if there were only a few cars at LOS F conditions on the side street. These kinds of results did not represent the main volumes along Missouri Flat Road which were at LOS B or better conditions (over 95% of the total traffic volume being analyzed).

The County's planning-level segment analyses has been included as an appendix[6] for reference purposes only, since the results were limited to only a few variables of traffic conditions, whereas the SimTraffic microsimulation traffic models assembled for this study are more accurate and are based on measured roadway speeds, intersection signal timings and operations, specific median configurations and turn lanes, as well as variables such as closely spaced and complex intersections such as exist at the Missouri Flat Road / US 50 freeway interchange ramps and adjacent intersections.

LOS A/B conditions exists on Missouri Flat Road for the main "thru" traffic (as can be seen in Table ES.2 and ES.3). This through traffic is primarily moving at or near posted speed limits, indicating a lack of congestion. However, there are fewer gaps in this "thru" traffic due to the high volume of "thru" traffic, resulting in higher delays for side street traffic (much smaller volumes), trying to enter the road. Table 4

[6] See Appendix A.6: Planning Level Segment Analysis

summarizes the segment levels of service for Missouri Flat and Pleasant Valley Roads, using the SimTraffic microsimulation methodology. The SimTraffic HCM 2010 microsimulation method takes into consideration all adjacent intersections, signal timings, delays, turning movements, and medians which may be a two-way left turn lane (TWLTL) or a left turn pocket, or even a stop sign or signal. It also considers the specific speed limits and saturation flow rates determined from field data measurements. The results shown in Table 4 are summarized as an average vehicle delay for each roadway segment as well as the corresponding level of service (based on HCM 2010), and the resulting speeds of traffic. The level of service is based on the calculated delay, which is based on numerous factors built into the microsimulation model. The microsimulation method is calculating the delay for the segment and not the side streets.

Table 4. Existing Year 2018 Link Segment Roadway Level of Service Summary

	ARTERIAL SEGMENT LOCATION	Road Type	*SIMTRAFFIC ARTERIAL SEGMENT ANALYSIS, HCM 2010*					
			Year 2018 AM Peak			Year 2018 PM Peak		
			LOS	AVG DELAY	AVG SPEED	LOS	AVG DELAY	AVG SPEED
1	Missouri Flat Plaza to US 50 WB Ramps	4AD	B	15.3	10	C	25.2	5
2	Missouri Flat US 50 WB Ramps to EB Ramps	4AD	A	8.3	16	A	6.7	19
3	Missouri Flat US 50 EB Ramps to Mother Lode	4AD	A	9.5	10	C	22.8	4
4	Missouri Flat Mother Lode to Forni	4AD	A	3.5	20	C	25.3	4
5	Missouri Flat Forni to Golden Center	4AD	C	20.3	12	C	24.9	10
6	Missouri Flat Golden Center to China Garden	2A	B	13.6	16	B	10.0	20
7	Missouri Flat China Garden to Industrial	2A	A	1.6	33	A	1.5	30
8	Missouri Flat Industrial to Enterprise	2A	A	1.6	38	A	1.6	38
9	Missouri Flat Enterprise to Pleasant Valley	2A	A	1.4	40	A	5.0	29
10	Pleasant Valley Missouri Flat to Faith	2A	C	15.2	22	C	15.5	21
11	Pleasant Valley Faith to China Garden	2A	A	3.6	35	C	21.0	24
12	Pleasant Valley China Garden to Fowler	2A	A	4.0	35	C	21.0	24
13	Pleasant Valley Missouri Flat to Commerce	2A	A	3.2	36	A	2.6	39
14	Pleasant Valley Commerce to Patterson	2A	A	5.3	37	A	7.3	34
15	Pleasant Valley Patterson to Forni	2A	A	6.6	20	A	5.9	21
16	Pleasant Valley Forni to SR 49 (south)	2A	B	10.5	15	B	10.7	15

Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

Year 2018 Roadway Segment Analyses Results

Table 4 shows that there are satisfactory levels of service for roadway segments in the study area based on the microsimulation HCM 2010 analysis, and these results correlate well with the levels of service calculated for intersections (compare with Table ES.2), also using HCM 2010 methods for intersection level of service.

As per Policy TC-Xa (Table TC-2), Missouri Flat Road is allowed to operate at LOS F, provided the V/C ratio does not exceed 1.12 from U.S. Highway 50 to Mother Lode Drive, or 1.20 from Mother Lode Drive to China Garden Road.

Saturation Flow Rates in Study Area

PRISM Engineering conducted extensive saturation flow rate data collection and analyses of existing traffic operations along the Missouri Flat corridor, in order to help ascertain the proper operating traffic flow

capacity of actual traffic in this area. Table A.1 in the appendix shows the summary of this saturation flow rate survey information and how it was applied in this study to properly calibrate and validate the micro-simulation models used with Synchro and SimTraffic along the Missouri Flat Road corridor and at the US 50 freeway interchange.

Section A.2 in the Appendix explains the details pertaining to the calibration and validation of the SimTraffic microsimulation traffic model. In summary, the Saturation Flow Rate (SFR) calculated for THRU movements in the study area was found to be 1825 vph, and LEFT TURN movements were 1730 vph. The average SFR near this interchange calculates to 1798 vph or about 1800 vph… which correlates with the values used by PRISM Engineering in the Synchro HCM 2010 software as a part of this study's capacity analyses.

Saturation Flow Rate may be derived from the steady state headway, which is defined as the average elapsed time between the passage of successive vehicles over the stop line in the same lane. The Highway Capacity Manual suggests recording the time of passage of the fourth and 10 vehicles over several cycles to determine this time value for 6 vehicles. This assumes that the initial queue at the start of green is at least 10 vehicles long. The first three vehicles in the queue of 10 are omitted because of startup speeds.

Saturation Flow is calculated as: **SFR= 3600 / [(t(10) – t(4)) / 6], OR SFR= 3600 / [(t(N) – t(4) / (N-4)]**

Figure 4A shows the existing ADT and pm peak hour link segment vph on a map that has been derived from recent Year 2018 hose counts taken by PRISM Engineering, as well as Caltrans 2015 counts updated as needed to correspond with Year 2018 totals.

Figure 4B shows the projected Year 2027 ADT volumes using growth rates derived from the intersection turning movement counts for pm peak hour, and projected up or down in the same percent ratio as the peak hour SimTraffic model volumes. It should be noted that with the advent of the Diamond Springs Parkway , the County's traffic model showed volumes on SR 49 and parts of Missouri Flat Road going down in the future as some traffic reassigns in the region to take advantage of the shorter route. This is especially true for traffic going and coming from Pleasant Valley east of SR 49. A detailed discussion of this is found in the Trip Distribution section after Figure 9 under "Diamond Springs Parkway Effect."

Figure 4C shows the projected Year 2035 ADT volumes.

Figure 5 shows the existing am peak hour intersection turning movements, and Figure 6 shows the existing pm peak hour traffic volumes for each of 17 existing study intersections where existing data taken by PRISM Engineering is summarized.

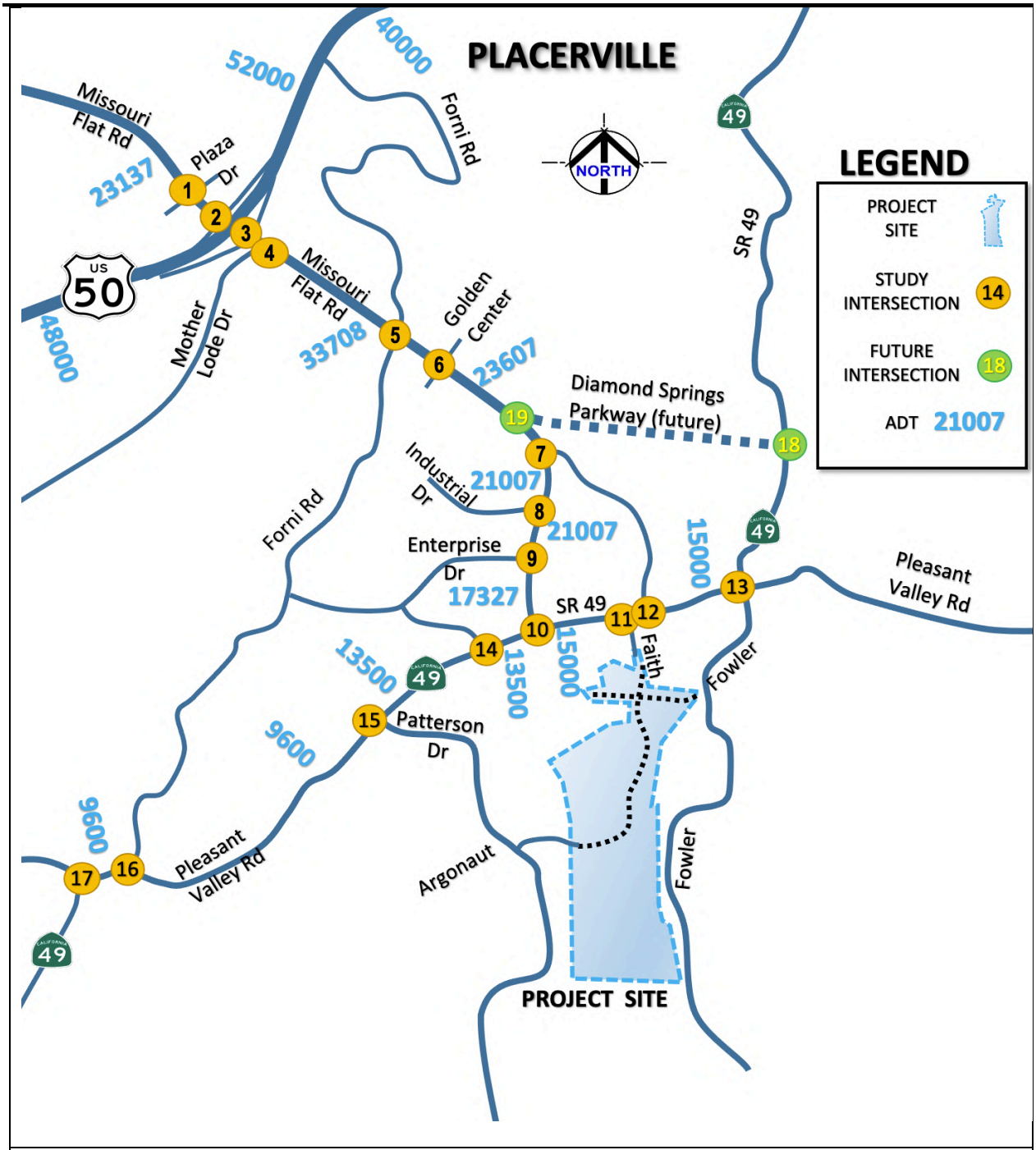


Figure 4A. Existing Year 2018 ADT Volumes on Study Roadways

Note: Data is from new traffic counts taken in 2018 along study street segments

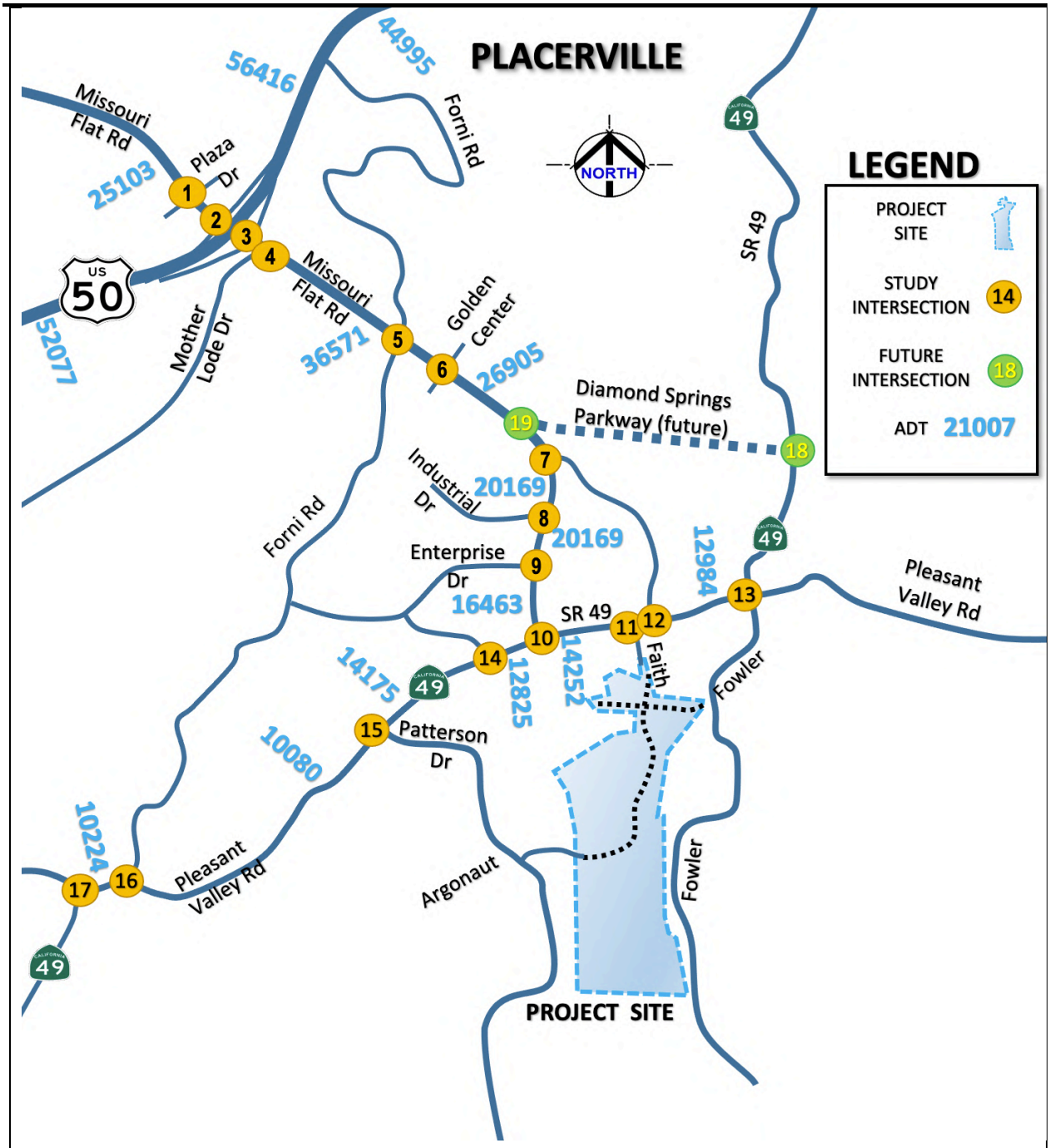


Figure 4B. Year 2027 Projected ADT Volumes on Study Roadways

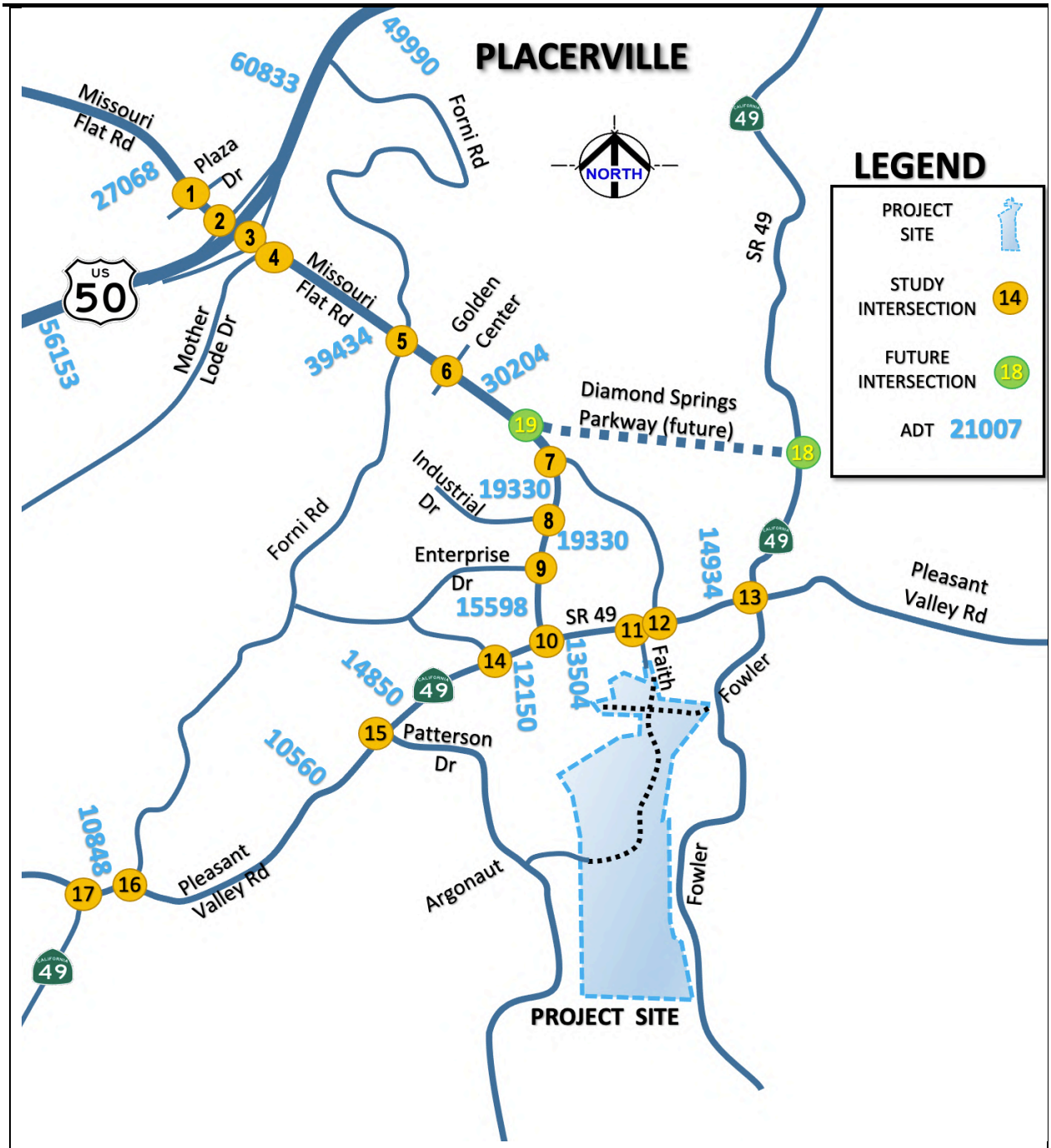


Figure 4C. Year 2035 Projected ADT Volumes on Study Roadways

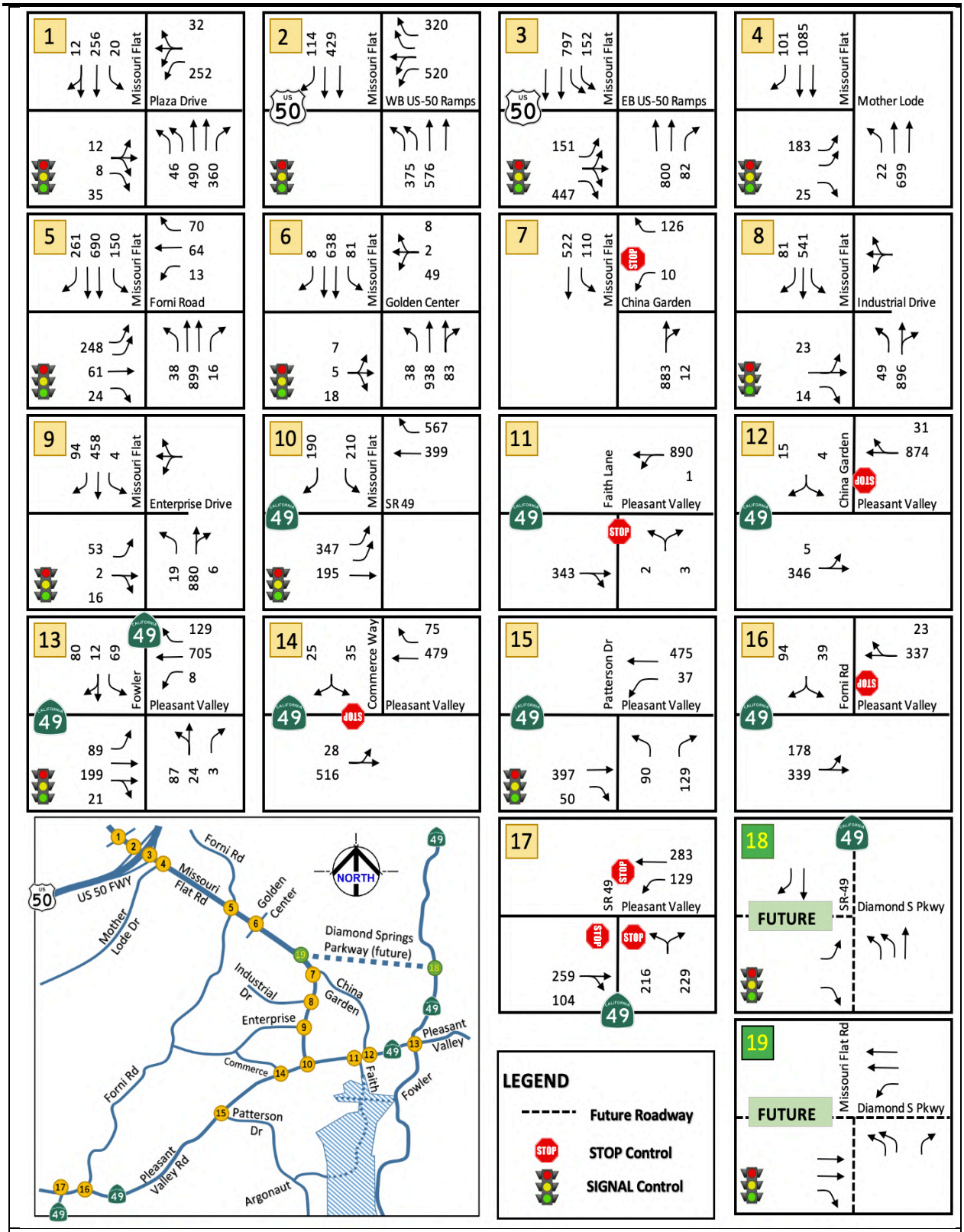


Figure 5 –AM Peak Hour Existing Year 2018 Intersection Turn Volumes

Source: PRISM Engineering and El Dorado County

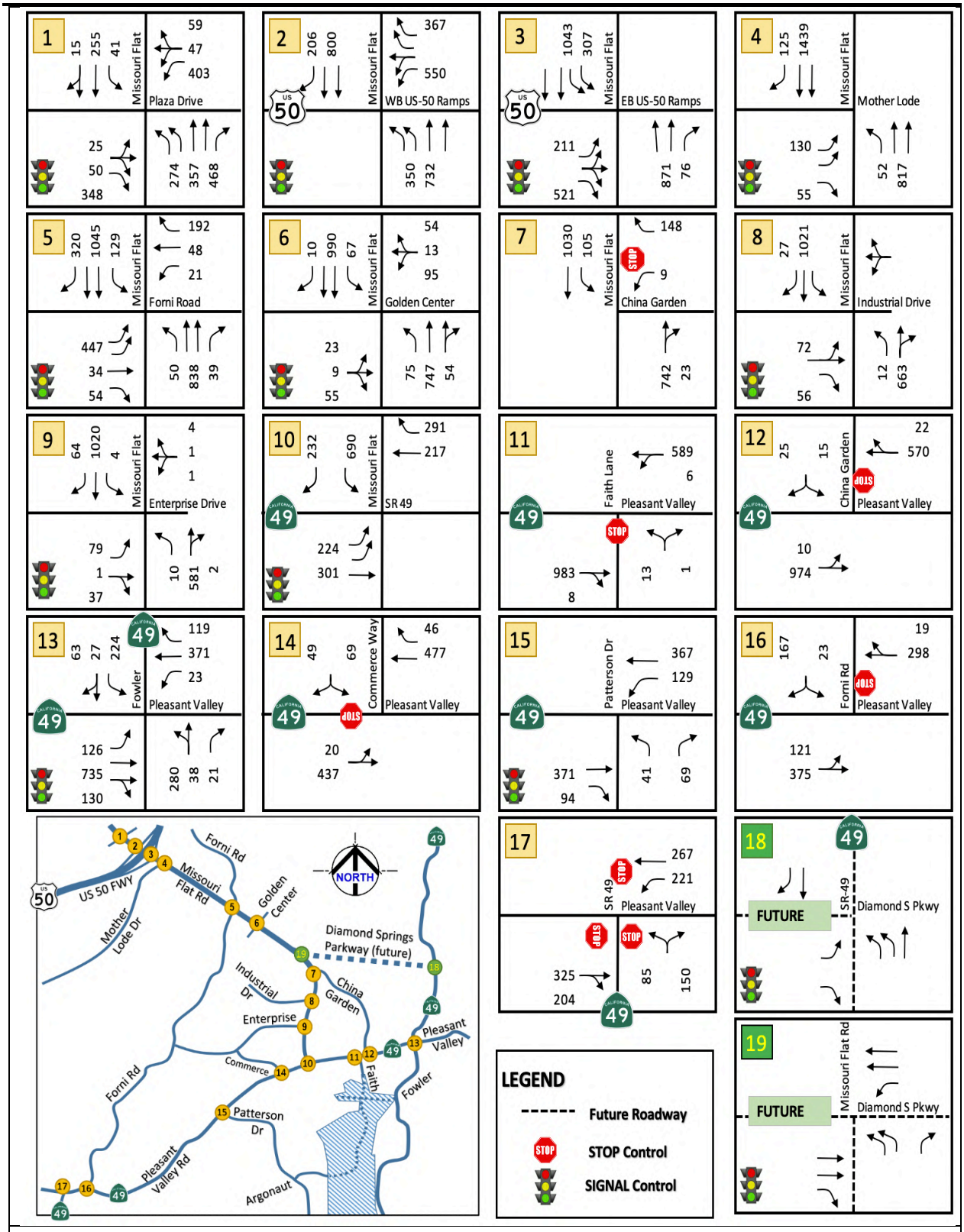


Figure 6 –PM Peak Hour Existing Year 2018 Intersection Turn Volumes

Source: PRISM Engineering and El Dorado County

Existing Bicycle and Pedestrian Facilities

Bicycle and Pedestrian facilities are limited in the study. On Missouri Flat Road south of Golden Center Drive these facilities are very poor or non-existent because Missouri Flat Road transitions from a four-lane arterial to a two lane arterial. Figure 7 depicts the County's Bike Plan Map and shows the only Class 1 dedicated bike lane corridor, the El Dorado Trail, that intersects with Missouri Flat Road about 500 feet south of Golden Center Drive. There are Class II bikes lanes and sidewalks to the north of this location all the way to the US 50 freeway.

There are Class II bike facilities (striped bike lanes) on Missouri Flat Road from The El Dorado Trail just 500 feet south of Golden Center Drive, to the US 50 freeway WB ramp on the north, and then only sidewalks are available to Plaza Drive. North of Plaza Drive Class II bike lanes are again found on Missouri Flat Road. The map in Figure 7 also shows planned Class II bike lanes for Missouri Flat Road south of Golden Center Drive to Pleasant Valley Road, and for Pleasant Valley Road throughout the entire study area.

Sidewalks exist along Missouri Flat Road from the El Dorado Trail on the south to beyond Plaza Drive shopping center on the north, and then disappear to the north of the shopping center. South of the El Dorado Trail Class I bike lane parking lot there are no sidewalks on Missouri Flat Road all the way to its terminus at Pleasant Valley Road on the south. Sidewalks on Pleasant Valley Road do not exist except in a few instances in the immediate vicinity at the following intersections: 1) Fowler Lane/SR 49, 2) Patterson Drive, 3) and Koki Lane.

In the vicinity of the project on Pleasant Valley Road near Faith Lane there are no sidewalks along Pleasant Valley Road, and no Class II bike lanes for the one mile section of Pleasant Valley Road between Patterson Drive to Fowler Lane. The County has plans for Class II bikes lanes on Pleasant Valley Road throughout the entire study area, but this will take widening of the road to make this possible as the pavement width is only 24 feet in many locations.

Existing Transit Facilities

El Dorado Transit has several facilities that directly serve Missouri Flat Road in the study area. Figure 8 shows several bus stops in the study area where there is also a transfer center (Missouri Flat Road Transfer Center) along the frontage the Walmart shopping center just south of Forni Road.

The lines that provide service to Missouri Flat Road and Pleasant Valley Road in the project study area are:

- LINE 30 which serves Missouri Flat Road from the El Dorado Center of Folsom Lake College on the north, to Diamond Springs Community (Pleasant Valley Road) on the south.

LINE 50X – 50 Express which serves the El Dorado Center of Folsom Lake College on the north and Missouri Flat Road Transfer Center at Forni Road on the south. It also enters the US 50 freeway to the western regions west of Missouri Flat Road as shown in Figure 8.

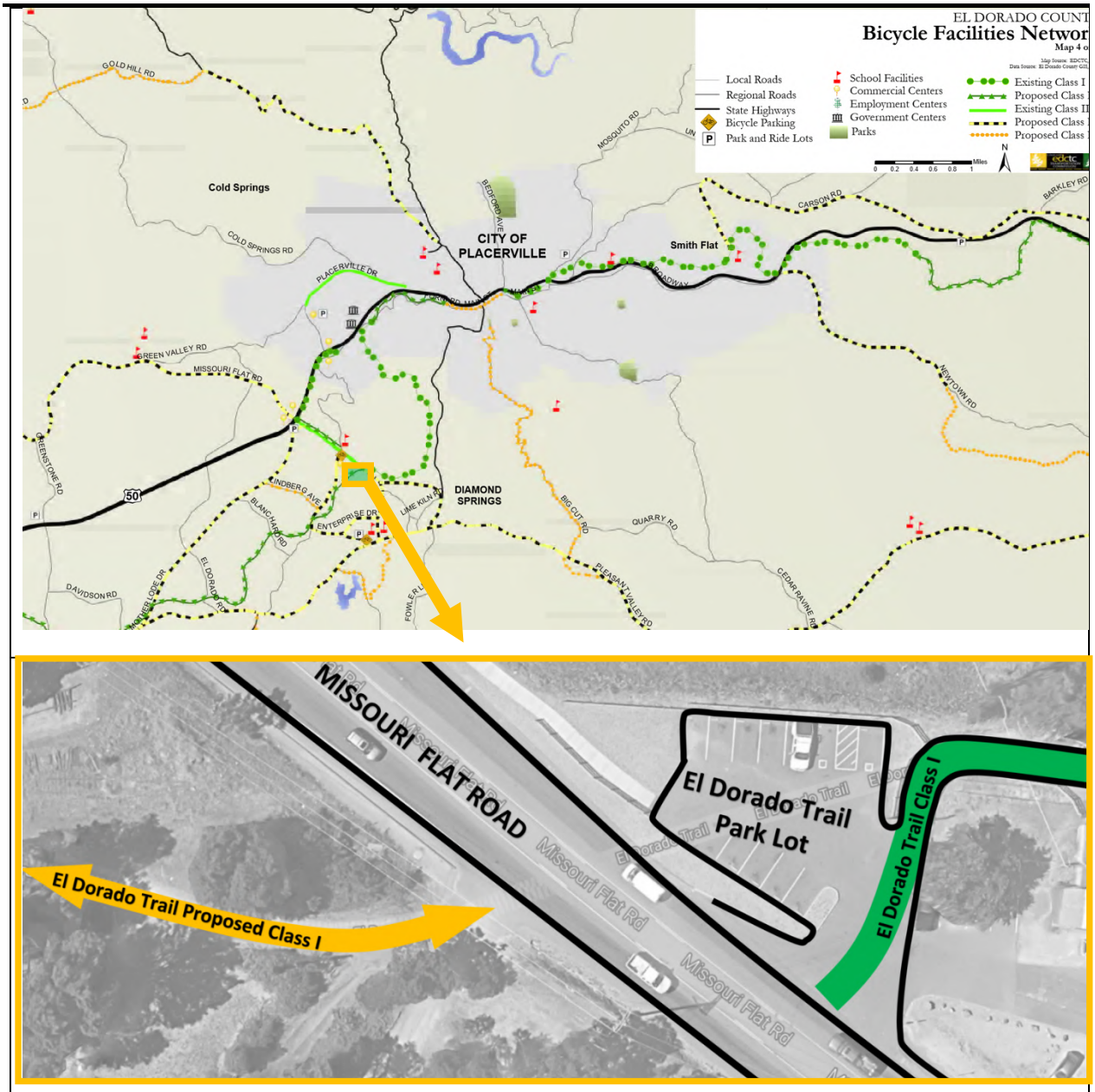


Figure 7 – Bike Map for Diamond Springs Vicinity, and Missouri Flat Road

Source: El Dorado County Transportation Commission and El Dorado Transit

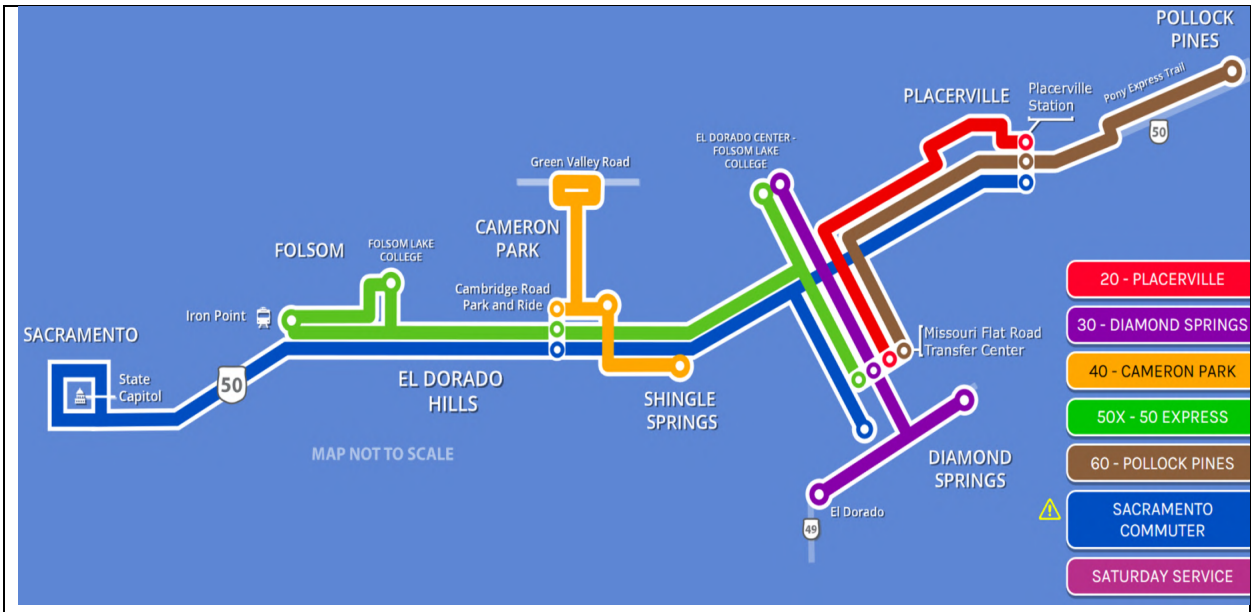


Figure 8 –Transit Map for El Dorado & Diamond Springs Vicinity

Source: El Dorado County Transportation Commission and El Dorado Transit

IV. Existing (Year 2018) Plus Project Conditions

Project Trip Generation and Distribution

The project is currently zoned CC and RM. The project is to be developed as 157 single family residential units with 225 multi-family uses on 142.3 acres. Table 5 documents the trip generation summary by residential type for the am and pm peak hour time periods, as well as the daily total. Tables 6 and 7 document the trip distribution percentages used to assign traffic to the surrounding roadways for the am and pm peak hours, respectively. Figure 9 shows the graphical representation of the trip distribution information in Tables 6 and 7. These tables document specific project trip generation totals to and from various destinations for the am and pm peak hours, respectively. It should be noted that the trip distribution analysis has been updated from previous reports based on input from Caltrans, and 10% of the project traffic was reassigned to use SR 49 to the north towards Placerville. This partial shift in project only traffic lowered project traffic volumes on Missouri Flat Road and through the US 50 interchange. Tables 6 and 7 document these totals and how they were assigned.

Table 5. Trip Generation Summary for AM, PM, and Daily

		Trip Rates			Directionality					TRIP ENDS			Directionality			
Description/ITE Code	Units	Week day	AM	PM	AM In	AM Out	PM In	PM Out	Dwelling Units	Daily	AM	PM	AM In	AM Out	PM In	PM Out
Single Family Homes (ITE Landuse Code: 210)	DU	9.52	0.75	1.00	25%	75%	63%	37%	157	1495	118	157	29	88	99	58
Condo / Townhouse (ITE Landuse Code: 230)	DU	5.81	0.44	0.52	17%	83%	67%	33%	225	1307	99	117	17	82	78	39
									382	2802	217	274	46	170	177	97

Source: ITE Trip Generation Manual, 9th ed.

Table 6. AM Peak Hour Trip Distribution of Project Traffic, Local Roads and Highways

	AM Peak Hour			
	%	Total	In	Out
Missouri Flat Rd n/o Plaza	18%	39	8	31
US 50 Freeway west	16%	35	7	27
US 50 Freeway east	14%	30	6	24
Mother Lode Dr west	2%	4	1	3
Missour Flat Rd Internal	20%	43	9	34
Pleasant Valley Rd west	10%	22	5	17
Pleasant Valley Rd east	10%	22	5	17
SR 49 north to Placerville	10%	22	5	17
	100%	217	46	170

Table 7. PM Peak Hour Trip Distribution of Project Traffic, Local Roads and Highways

	PM Peak Hour			
	%	Total	In	Out
Missouri Flat Rd n/o Plaza	18%	49	32	17
US 50 Freeway west	16%	44	28	15
US 50 Freeway east	14%	38	25	14
Mother Lode Dr west	2%	5	4	2
Missour Flat Rd Internal	20%	55	35	19
Pleasant Valley Rd west	10%	27	18	10
Pleasant Valley Rd east	10%	27	18	10
SR 49 north to Placerville	10%	27	18	10
	100%	274	177	97

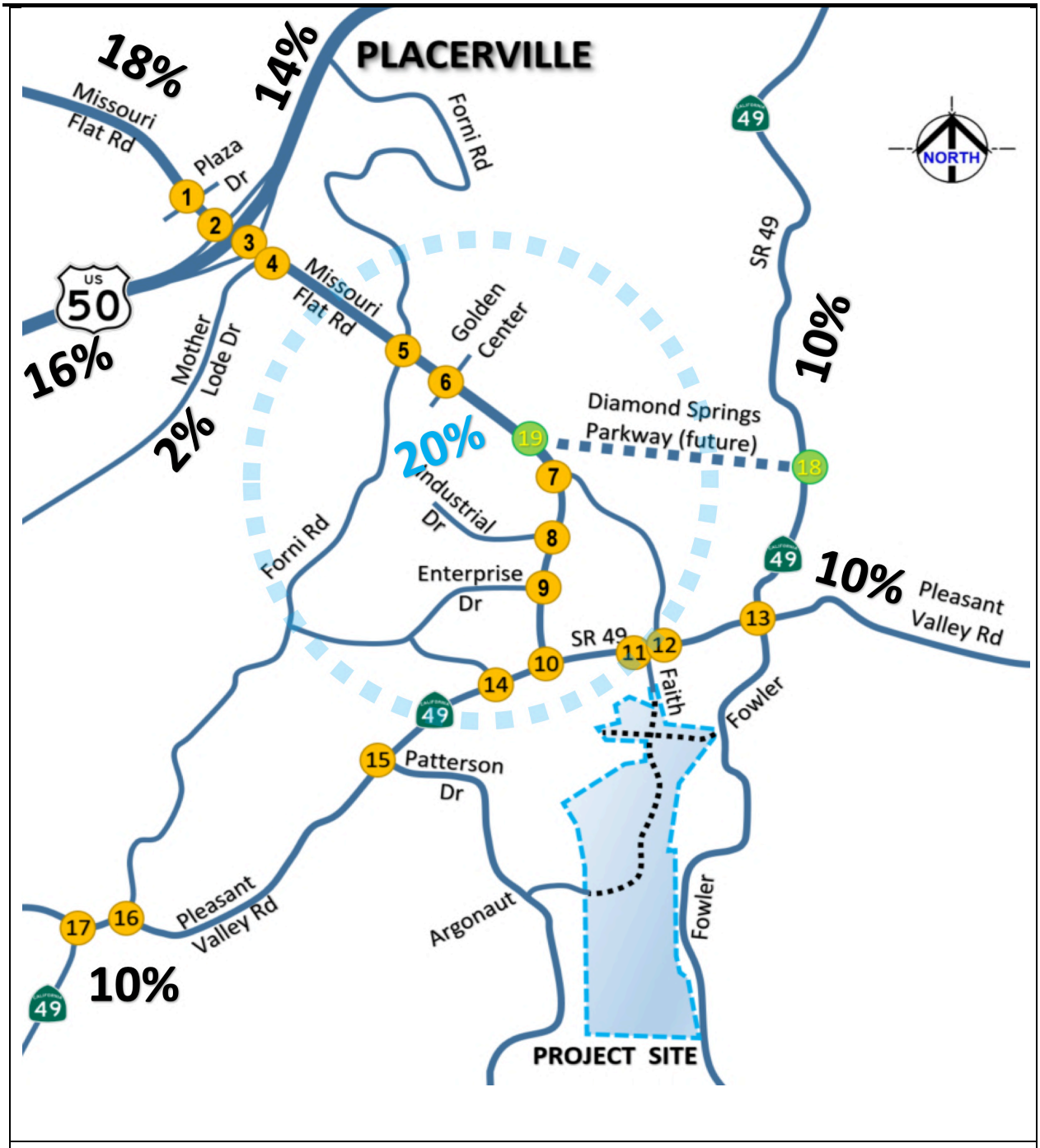


Figure 9 – Trip Distribution Pattern for Project Traffic

Source: County's Traffic Model Output, Local Traffic Patterns, and PRISM Engineering

Trip generation for development projects is typically calculated based on rates contained in the Institute of Transportation Engineer's publication, *Trip Generation 9th Edition*[7]. *Trip Generation* is a standard reference used by jurisdictions throughout the United States for the estimation of trip generation potential of proposed developments. PRISM Engineering utilized the ITE Trip Generation Rates for

[7] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

residential developments in this study to quantify and predict the future traffic for the Dorado Oaks project. Figures 10 and 11 are project only traffic for am and pm peak hours, respectively. Figures 12 and 13 show the turning movement diagrams for am and pm peak Year 2018 plus Project scenarios.

Diamond Springs Parkway Effect. The trip distribution of the project traffic was developed by PRISM Engineering using engineering judgment in interpreting the traffic model output volumes with and without the project. In addition, PRISM Engineering reviewed the Existing Conditions model outputs and compared these to future Cumulative Conditions traffic model outputs which also had the Diamond Springs Parkway connector road in the model which shifted traffic patterns. The Diamond Springs Parkway connector road would connect from SR 49 over to the Missouri Flat Road corridor just north of China Garden Road. The traffic model outputs with the Diamond Springs Parkway connector road in it, lowered future year 2035 traffic volumes along Pleasant Valley Road between SR 49 on the east and Missouri Flat Road on the west to a level about 90% of existing levels for the am peak hour (1,569 vph for Year 2035 and 1,736 vph for Year 2010 model). In other words, the Diamond Springs Parkway had the effect to lower traffic on Pleasant Valley Road as well as Missouri Flat Road from Pleasant Valley Road on the south to China Garden Road on the north.

PRISM Engineering used the growth rates from existing to future and modified the existing traffic counts taken in the field to determine Year 2035 levels. This growth rate was calculated using straight line interpolation and coming up with a yearly growth rate, and applying this rate to year 2018 traffic counts to develop a year 2035 turning movement count database for all 18 study intersections. The intersection affected by the shift in traffic due to the Diamond Springs Parkway (intersections 13, 18, and 19) were further adjusted to shift future traffic to use the Diamond Springs Parkway corridor similar to the pattern that shifted in the County's travel demand model outputs. For example, if Pleasant Valley Road volumes for Year 2035 in the model were 10% lower than the year 2010 model because of the Diamond Springs Parkway connector, it was assumed that traffic obviously shifted with the faster more direct and less congested route in the model. This shift was reflected and adjusted in the Year 2035 turning movement counts used in the analyses of this traffic study. Through traffic on SR 49 to and from Pleasant Valley regions that would have normally used the SR 49/Pleasant Valley Road to make a right turn onto Missouri Flat Road and on to the US 50 freeway, were reassigned to use SR 49 to the north from the Fowler Road intersection and make a left turn onto the Diamond Springs Parkway which then connects up to and becomes Missouri Flat Road in the future.

The project traffic was assigned to destinations for shopping and work, etc., in the peak hour time periods, consistent with the County's traffic model. A portion of the project traffic would "sink" to the commercial areas along Missouri Flat Road near Forni Road as a destination, and other portions of project traffic would seek regional destinations via the US 50 freeway, and other pathways to destinations east or west along the Pleasant Valley Road corridor. Some of the traffic that would go to Placerville was manually assigned to the SR 49 connection between Pleasant Valley Road and the City of Placerville (10%) as suggested by Caltrans, because the traffic model did not assign traffic via this route. This 10% was taken from the 24% assigned by the model to go east on US 50, to Placerville or beyond, and the resulting remainder was 14% of the project's total traffic using US 50 to get to Placerville, as shown in Figure 9. This trip distribution adjustment takes care of project traffic utilizing all possible routes (incl. SR 49) to and from Placerville, and not just Missouri Flat Road / US 50.

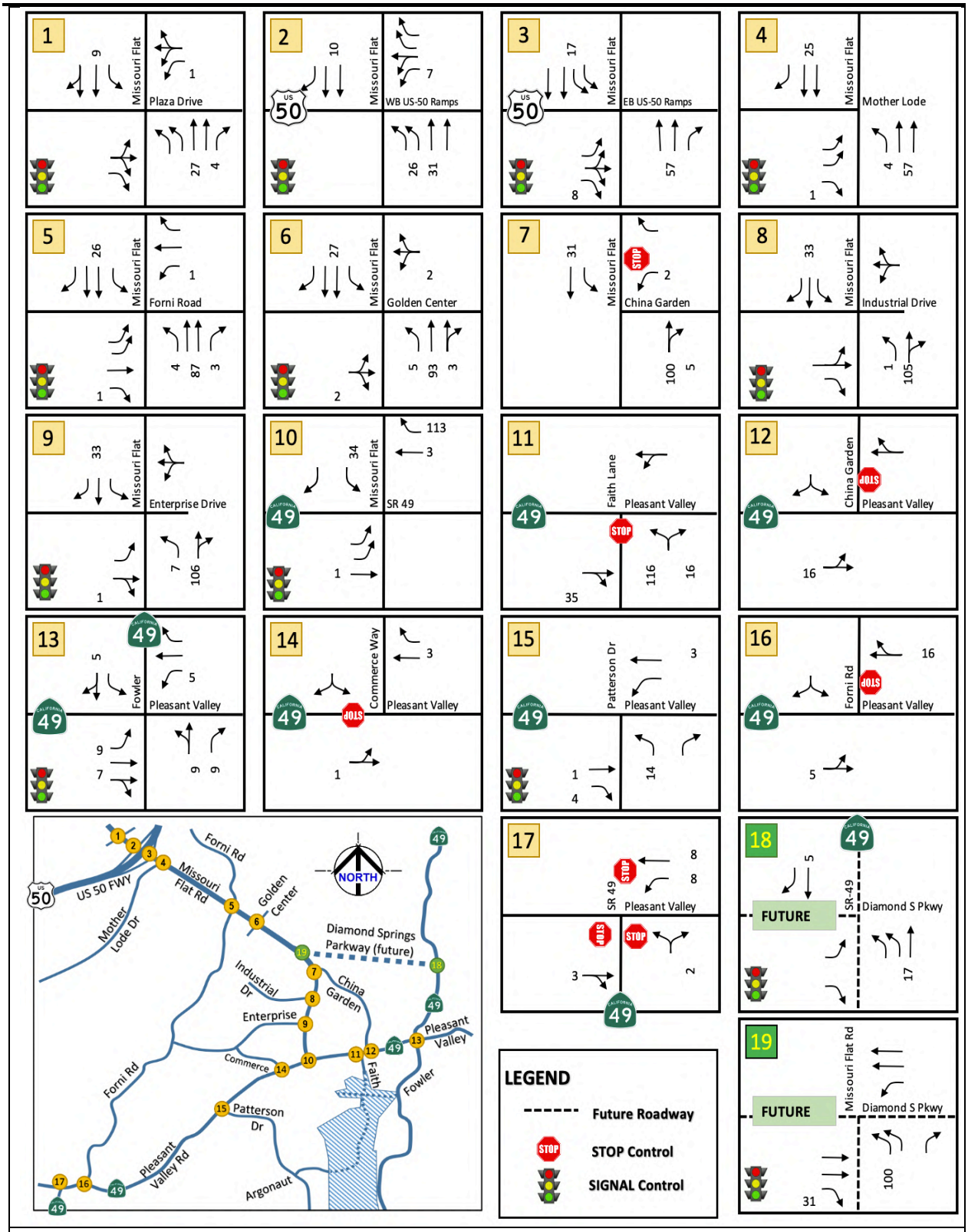


Figure 10. AM Project Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

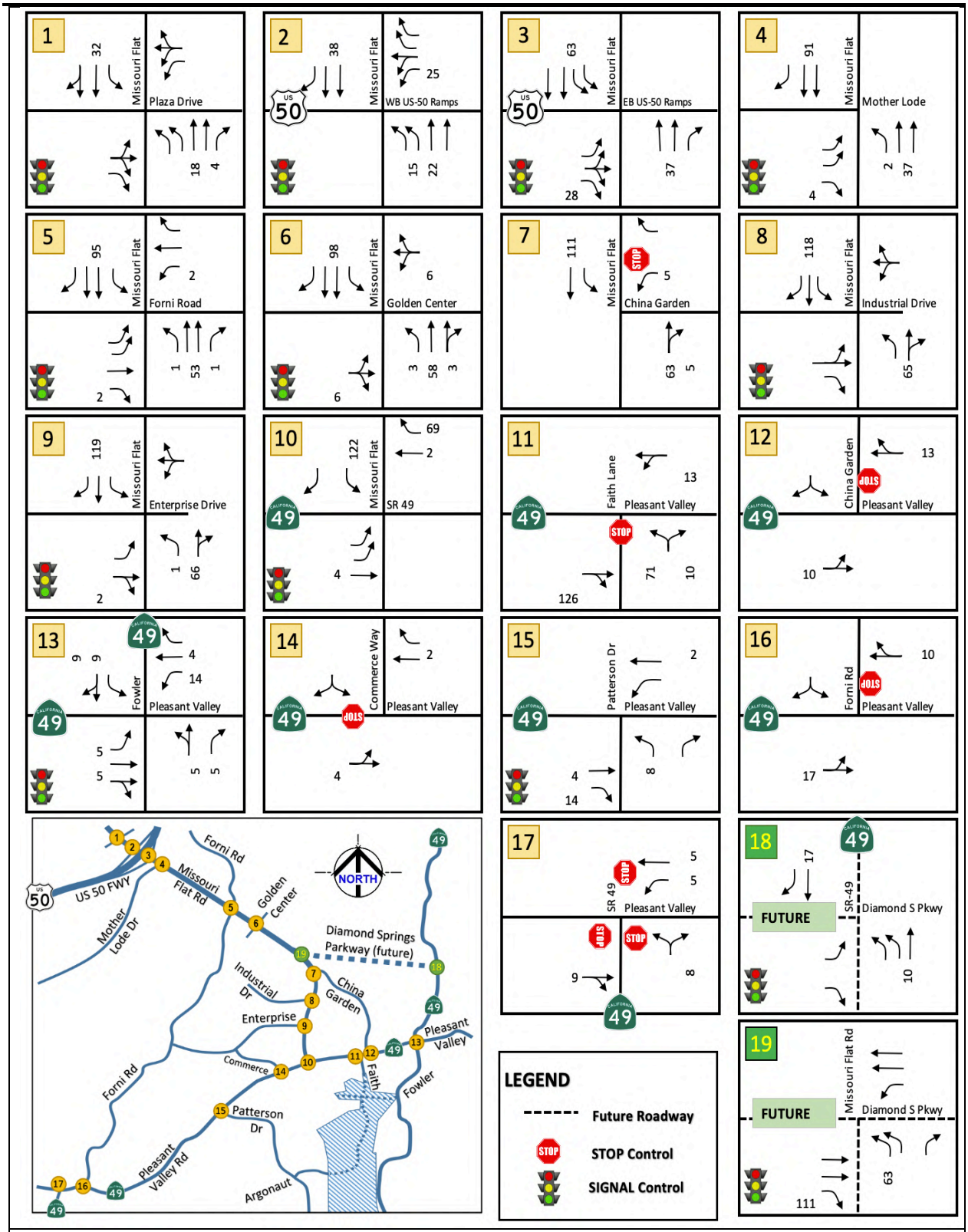


Figure 11. PM Project Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

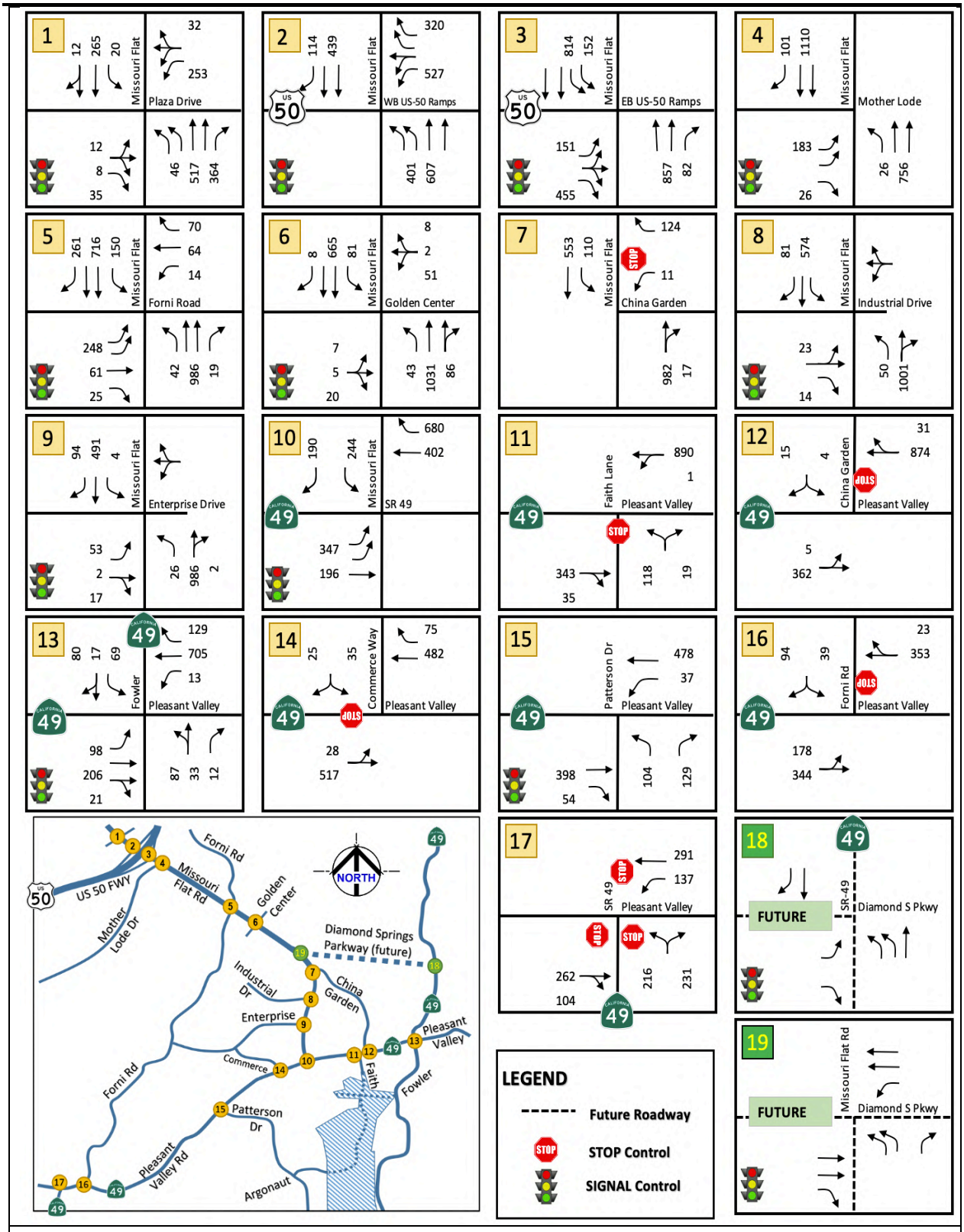


Figure 12. AM Existing 2018 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

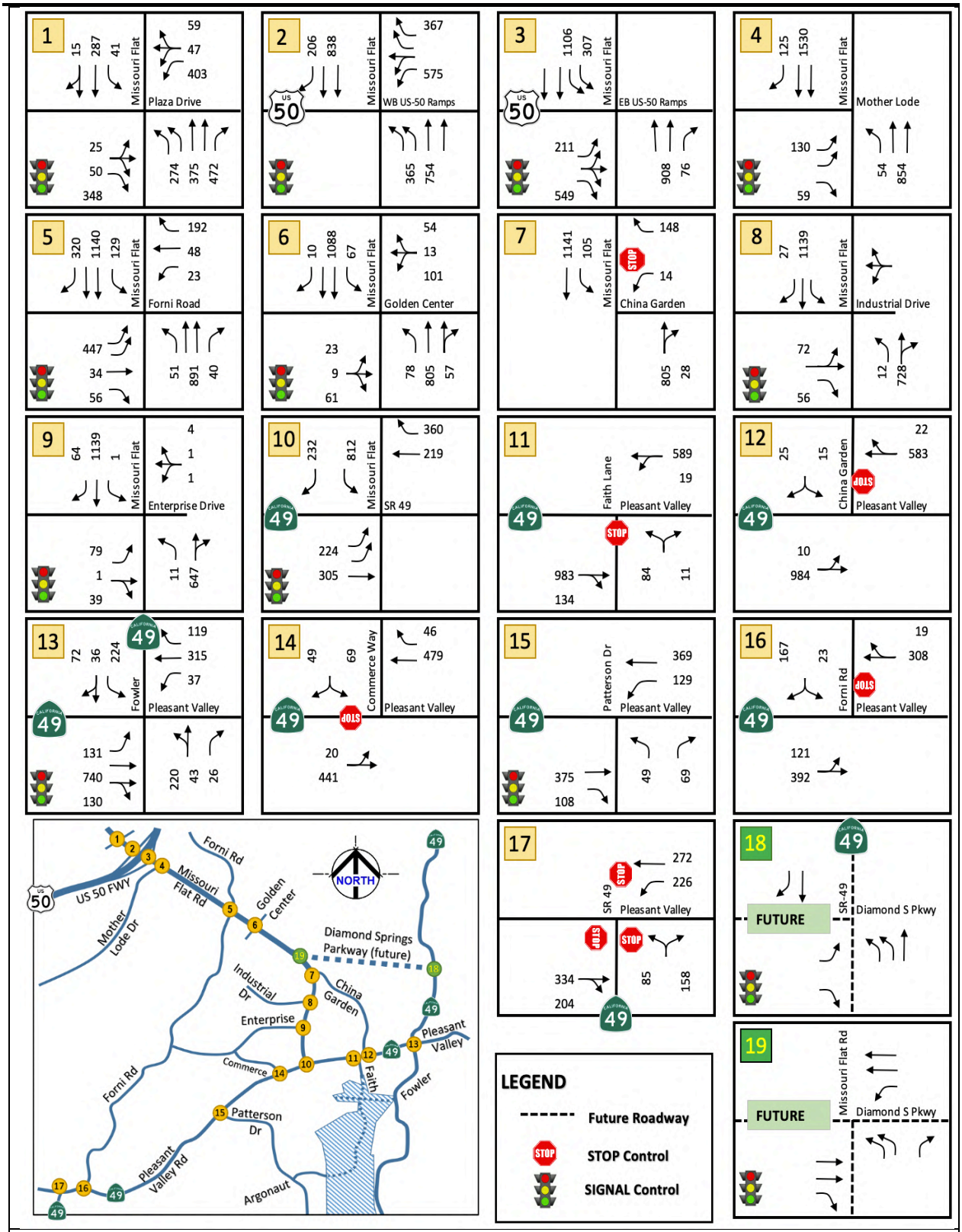


Figure 13. PM Existing Year 2018 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

Tables 8 and 9 summarize the intersection capacity analysis results and link segment capacity analysis results for the Year 2018 scenarios, respectively. One location would be at LOS F with the addition of project traffic (Pleasant Valley Rd. at Faith Lane). Tables 10 and 11 summarize the signalized intersection queue analysis for this same scenario, for the am and pm peak hour time periods.

Table 8. Existing (2018) Plus Project Intersections Level of Service Summary

	INTERSECTION LOCATION	Control	YEAR 2018 AM Peak				YEAR 2018 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	20.3	C	20.7	C	27.4	C	28.7
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.9	B	15.9	B	18.3	B	18.3
3	Missouri Flat Rd at US 50 EB Ramps	S	B	16.6	B	16.6	C	24.6	C	24.6
4	Missouri Flat Rd at Mother Lode Dr	S	A	9.0	A	9.1	C	22.0	C	22.0
5	Missouri Flat Rd at Forni Rd	S	C	20.5	C	23.5	C	26.0	C	26.0
6	Missouri Flat Rd at Golden Center Dr	S	C	28.9	C	28.9	C	25.6	C	25.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.8	A	3.1	A	2.3	A	2.4
		WB	D	25.5	D	31.8	C	22.5	D	26.2
8	Missouri Flat Rd at Industrial Dr	S	A	3.6	A	3.7	A	10.6	B	11.5
9	Missouri Flat Rd at Enterprise Dr	S	A	4.7	A	4.9	B	15.1	B	15.1
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	13.9	B	15.2	C	28.1	D	42.5
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	8.4	A	0.5	B	13.5
		NB	C	17.1	F	84.1	E	47.9	F	254
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.3	A	0.3	A	0.8	A	0.8
		SB	C	20.2	C	20.3	D	29.5	D	30.3
13	Pleasant Valley Rd at SR 49 N / Fowler	S	E	62.3	E	62.3	D	41.1	D	45.1
14	Pleasant Valley Rd at Commerce Way	TW	A	1.4	A	1.4	A	2.8	A	2.8
		SB	C	21.5	C	21.6	C	23.5	C	23.9
15	Pleasant Valley Rd at Patterson Dr	S	A	6.5	A	7.0	A	7.6	A	8.5
16	Pleasant Valley Rd at Forni Rd	TW	A	4.3	A	4.4	A	3.8	A	3.9
		SB	C	21.2	C	22.0	C	15.1	C	15.5
17	Pleasant Valley Rd at SR 49 S	AW	E	44.2	E	45.9	C	22.3	C	24.0
18	Diamond Springs Parkway at SR 49		Future		Future		Future		Future	
19	Diamond Springs Pkwy at Missouri Flat									

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Source: PRISM Engineering and HCM 2010 calculation in Synchro and/or Sim Traffic

It can be seen from Table 8 that the intersection of Pleasant Valley Road at Faith Lane goes from an acceptable LOS E condition in the pm peak hour to an unacceptable LOS F condition when the project traffic is added in. This intersection would provide primary access to the project site, and the change in level of service is due to addition of the project traffic to the Faith Lane approach.

Table 9. Year 2018 Scenarios Roadway Segment Level of Service Summary

	ARTERIAL SEGMENT LOCATION	Road Type	SIMTRAFFIC ARTERIAL SEGMENT ANALYSIS, HCM 2010											
			Year 2018 AM Peak						Year 2018 PM Peak					
			No PROJ			w/PROJ			No PROJ			w/PROJ		
			LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed
1	Missouri Flat Plaza to US 50 WB Ramps	4AD	B	15.3	10	B	18.7	10	C	25.2	5	C	24.6	5
2	Missouri Flat US 50 WB Ramps to EB Ramps	4AD	A	8.3	16	B	12.0	14	A	6.7	19	B	15.8	10
3	Missouri Flat US 50 EB Ramps to Mother Lode	4AD	A	9.5	10	B	11.8	10	C	22.8	4	B	13.3	6
4	Missouri Flat Mother Lode to Forni	4AD	A	3.5	20	A	5.9	14	C	25.3	4	A	5.7	16
5	Missouri Flat Forni to Golden Center	4AD	C	20.3	12	C	22.6	11	C	24.9	10	B	16.0	15
6	Missouri Flat Golden Center to China Garden	2A	B	13.6	16	A	8.8	16	B	10.0	20	A	7.1	19
7	Missouri Flat China Garden to Industrial	2A	A	1.6	33	A	1.4	24	A	1.5	30	A	2.7	22
8	Missouri Flat Industrial to Enterprise	2A	A	1.6	38	A	2.1	37	A	1.6	38	A	7.4	20
9	Missouri Flat Enterprise to Pleasant Valley	2A	A	1.4	40	A	2.4	36	A	5.0	29	B	13.5	15
10	Pleasant Valley Missouri Flat to Faith	2A	C	15.2	22	C	16.0	21	C	15.5	21	C	17.0	20
11	Pleasant Valley Faith to China Garden	2A	A	3.6	35	A	4.0	35	C	21.0	24	C	21.0	24
12	Pleasant Valley China Garden to Fowler	2A	A	4.0	35	A	6.0	30	C	22.0	24	C	24.0	21
13	Pleasant Valley Missouri Flat to Commerce	2A	A	3.2	36	A	3.4	35	A	2.6	39	A	2.9	38
14	Pleasant Valley Commerce to Patterson	2A	A	5.3	37	A	6.4	35	A	7.3	34	A	9.0	33
15	Pleasant Valley Patterson to Forni	2A	A	6.6	20	A	6.7	20	A	5.9	21	A	6.3	20
16	Pleasant Valley Forni to SR 49 (south)	2A	B	10.5	15	B	10.5	15	B	10.7	15	B	10.9	15

Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

Year 2018 Roadway Segment Analyses Results

Table 9 shows that all locations for roadway segments calculate to LOS C or better conditions based on the HCM 2010 microsimulation model SimTraffic (for Missouri Flat Road and Pleasant Valley Road segments). These are satisfactory levels of service for roadway segments, less than the allowable LOS F conditions for roadway segments as per Policy TC-Xa[8]. These results closely correspond to the levels of service calculated for intersections (see Table 8). The results in Table 9 indicate that LOS C or better conditions prevails on Missouri Flat Road and Pleasant Valley Road. The project, therefore, does not create a significant impact to levels of service on the Missouri Flat Road arterial road segments (LOS C is OK), nor does the project create any significant impact to any of the Pleasant Valley Road arterial road segments (all LOS C or better). No roadway segment widening mitigations are recommended for this scenario. In the queue analysis summary tables that follow, the signalized intersections were analyzed for queue lengths on left turn pockets for all approaches to determine if the estimated queues would exceed the existing storage length of these turn pockets. If so, the table reports this problem as a YES in a red highlighted cell in Table 10 or Table 11. Note that intersections #18 and #19 are marked as "N/A" because they are a future intersection that would be constructed with the Diamond Springs Parkway connecting Missouri Flat Road on its west end with SR 49 on the east end.

[8] As per Policy TC-Xa (Table TC-2), Missouri Flat Road is allowed to operate at LOS F, provided the V/C ratio does not exceed 1.12 from U.S. Highway 50 to Mother Lode Drive, or 1.20 from Mother Lode Drive to China Garden Road.

Table 10 Year 2018 AM Peak Signalized Intersection Queues Summary

		AM Existing Year 2018				AM Year 2018+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	49	NO	NBL	330	56	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	182	YES	NBL	150	140	NO
		WBL	500	253	NO	WBL	500	156	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	132	NO	SBL	150	106	NO
		EBR	600	192	NO	EBR	600	148	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	123	NO	EBL	220	133	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	135	NO	EBL	200	164	NO
6	Missouri Flat Rd at Golden Center Dr	NBL	175	81	NO	NBL	175	149	NO
8	Missouri Flat Rd at Industrial Dr	NBL	75	36	NO	NBL	75	36	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	32	NO	NBL	90	40	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	144	NO	EBL	150	173	YES
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	99	NO	EBL	225	110	NO
15	Pleasant Valley Rd at Patterson Dr	NBR	200	88	NO	NBR	200	96	NO
18	Diamond Springs Parkway at SR 49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Diamond Springs Pkwy at Missouri Flat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Table 11 Year 2018 PM Peak Signalized Intersection Queues Summary

		PM Existing Year 2018				PM Year 2018+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	132	NO	NBL	330	146	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	180	YES	NBL	150	163	YES
		WBL	500	277	NO	WBL	500	201	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	174	YES	SBL	150	180	YES
		EBR	600	253	NO	EBR	600	222	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	135	NO	EBL	220	99	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	238	YES	EBL	200	256	YES
6	Missouri Flat Rd at Golden Center Dr	NBL	175	130	NO	NBL	175	113	NO
8	Missouri Flat Rd at Industrial Dr	NBL	75	28	NO	NBL	75	21	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	26	NO	NBL	90	22	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	141	NO	EBL	150	126	NO
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	340	YES	EBL	225	347	YES
15	Pleasant Valley Rd at Patterson Dr	NBR	200	74	NO	NBR	200	68	NO
18	Diamond Springs Parkway at SR 49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Diamond Springs Pkwy at Missouri Flat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Four of the intersections had pm peak hour turn pocket overflow issues for the 95th percentile calculations in the HCM 2010 methodology. These intersections had the overflow problem with and without the project traffic. The intersections with overflows are identified in the tables with red highlighted cells for both the am and pm peak hour time periods.

Sometimes when a right turn pocket overflows, it stops progress of through lane traffic, and the same is true for left turn pockets that have overflow and exceed the capacity of their length. Tables 10 and 11 for the am peak hour and pm peak hour traffic patterns respectively, show the critical overflow areas highlighted in red with "YES" to show 95% queue lengths greater than the turn bay length.

Traffic Signal Warrants, Year 2018 Scenarios

Table 12 reports the signal warrant analysis results for the Year 2018 am and pm peak hour scenarios (with and without project). Signals are warranted at four (4) out of the six (6) unsignalized study intersections. These are shown as "YES" in Table 12.

The California MUTCD stipulates thresholds for traffic conditions when a signal may be warranted based on the traffic volumes. The warrant for peak hour volumes was used in this report (Section 4C.04 Warrant 3, Peak Hour[9]). Based on this warrant, signals are currently warranted at five of the eight unsignalized study area intersections, even without the project, as shown in Table 12.

[9]The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Guidance: 06 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.

Table 12. Signal Warrants for Year 2018 AM & PM Peak Hour Scenarios

Intersection	AM for YEAR 2018	AM+PROJ for YEAR 2018	PM for YEAR 2018	PM+PROJ for YEAR 2018
Missouri Flat Rd at China Garden Rd	YES	YES	YES	YES
Pleasant Valley Rd at Faith Ln	NO	NO	NO	NO
Pleasant Valley Rd at China Garden Rd	NO	NO	NO	NO
Pleasant Valley Rd at Commerce Way	NO	NO	YES	YES
Pleasant Valley Rd at Forni Rd	YES	YES	YES	YES
Pleasant Valley Rd at SR 49 South	YES	YES	YES	YES

Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis (see Appendix A.11 for details on specific volumes used in the signal warrant analysis, as well as various criteria for warrants depending on two lane road, four lane road, six or more lane roads, etc).

Project Impacts for this Year 2018 plus Project Scenario

- Intersection Level of Service: Within acceptable County thresholds with the exception of two unsignalized intersections shown in Table 8:
    - Pleasant Valley Road and Faith Lane would operate at LOS B overall for Year 2018 pm peak hour plus project, but LOS F for the side street. This changes from LOS E for the side street without the project.
    - Pleasant Valley Road and SR 49 S is currently at LOS E for existing am peak hour, a signal is warranted at this intersection, and remains at LOS E with the project.
- SIMTRAFFIC Arterial Segment Level of Service: All locations are at LOS D or better conditions using this microsimulation methodology. No further mitigations are necessary based on segment analysis.
- Signalized Intersection Queues: The project adds to the 95th percentile queue overflows. See Tables 10 and 11 for red cells where a problem exists and would also be slightly additionally impacted by the project, lengthening the queues by as much as one additional vehicle length (not significant increase).
- Signal Warrants: Significant. Warrants met at four of the six unsignalized intersections as shown in the green highlighted cells of Table 12.

V. Near Term Future Year 2027 Conditions

Nearby Roadway Development Projects

Certain improvements to the study area roadway network were assumed to be in place in the Year 2027 and beyond scenarios. These include the proposed Diamond Springs Parkway (DSP) connection of Missouri Flat Road to SR 49. This capital improvement was included in the County's traffic model, reassigning traffic in the study area and lessening traffic volumes on Missouri Flat Road south of the parkway. Pleasant Valley Road volumes were also relieved with the parkway because of reassignment of traffic to use the new and more efficient corridor pathway of Pleasant Valley Road to SR 49 to Diamond Springs Parkway to Missouri Flat Road to the US 50 freeway. In addition, China Garden Road at Missouri Flat Road will no longer have a left turn out onto Missouri Flat Road. We reassigned this movement to the through volumes on DSP.

In order to develop the Year 2027 volumes, PRISM Engineering utilized linear interpolation methods to find the appropriate growth rates to determine the Year 2027 volumes from existing Year 2018 counts. These same volumes were adjusted accordingly based on traffic reassignment patterns found in the differences between the year 2010 County traffic model and the year 2035 traffic model which had the Diamond Springs Parkway in it. We were able to determine the percent differences, by year, for each of the link segments in the model along Missouri Flat Road and Pleasant Valley Road in the study area, whether it be a net increase or a net decrease (negative growth) on account of traffic shifts away from Missouri Flat Road south of the Diamond Springs Parkway corridor. The near-term conditions (10 years out from project, or Year 2027) anticipated the growth assumptions in the County's travel demand model, or in other words, the County's travel demand model contains the assumed background growth.

Calculation of Future Growth for Background Traffic.

PRISM Engineering obtained detailed output plots from the El Dorado County Department of Transportation staff [10] from their Travel Demand Forecast Model. The model anticipates future development within the County for the am and pm peak hour, Year 2010 and 2035 projections. The model output was used in linear interpolation to develop the Year 2027 traffic projection. Yearly growth rates for roads within the project study area were used to develop interim Year 2027 scenario background volumes for the analysis of the project. However, because of the shifts in traffic that would take place with the installation of the Diamond Springs Parkway, volumes on Missouri Flat Road would correspondingly go down. Also, Pleasant Valley Road between Missouri Flat Road and Fowler Lane would be reduced (by about 10%). Table 13 shows the growth rate calculations used. The difference in volume between the Year 2035 and Year 2010 models was used to get the 25 year increase, but only 18 years were used between 2018 and 2035. Specific roadway segment growth rates were used and not a global growth rate at all intersections. Volumes were balanced between intersections using the Volume Balance (VB) feature in the Synchro software. The Year 2027 and 2035 scenarios for both the am and pm peak hour and where all base volumes are balanced. Figures 14 and 15 show turning movements for the Year 2018 traffic projections only (no project traffic). Figures 16 and 17 show the turning movement diagrams for am and pm peak when the Project traffic is added in.

[10] Model plots received from DOT via Senior Civil Engineer Natalie Porter via email. Summarized in Appendix.

Table 13. Growth Rate Calculations for Study Area Roadways

	Peak Hour Volumes From 2010 and 2035 TDM Models						Year 2010-2035		Year 2017-2035	
	Year 2010		Year 2035		% Per Year		25 Year Growth		18 Year Growth	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Missouri Flat north of Plaza	1117	1451	1385	1711	1.0%	0.7%	24.0%	17.9%	**17.3%**	**12.9%**
Missour Flat south of Mother Lode	1656	1937	2236	2670	1.4%	1.5%	35.0%	37.8%	**25.2%**	**27.2%**
Missouri Flat south of Forni	1292	1513	1796	2116	1.6%	1.6%	39.0%	39.9%	**28.1%**	**28.7%**
Missour Flat south of China Garden	1273	1352	1135	1234	-0.4%	-0.3%	-10.8%	-8.7%	**-7.8%**	**-6.3%**
Missouri Flat north of SR 49	1186	1246	1021	1084	-0.6%	-0.5%	-13.9%	-13.0%	**-10.0%**	**-9.4%**
SR 49 west of Missouri Flat	1300	1386	1478	1606	0.5%	0.6%	13.7%	15.9%	**9.9%**	**11.4%**
SR 49 west of Pleasant Valley	1786	1943	1528	1626	-0.6%	-0.7%	-14.4%	-16.3%	**-10.4%**	**-11.7%**
SR 49 west of Patterson	1175	1197	1344	1405	0.6%	0.7%	14.4%	17.4%	**10.4%**	**12.5%**
SR 49 north of Pleasant Valley	893	1018	1117	1236	1.0%	0.9%	25.1%	21.4%	**18.1%**	**15.4%**
US 50 FWY west of Missouri Flat	4221	4340	5160	5316	0.9%	0.9%	22.2%	22.5%	**16.0%**	**16.2%**
US 50 FWY east of Missouri Flat	4257	4533	5009	5382	0.7%	0.7%	17.7%	18.7%	**12.7%**	**13.5%**
US 50 EB Off at Missouri Flat	418	565	583	724	1.6%	1.1%	39.5%	28.1%	**28.4%**	**20.3%**
US 50 WB on at Missouri Flat	521	430	673	558	1.2%	1.2%	29.2%	29.8%	**21.0%**	**21.4%**
SR 49 south of Pleasant Valley	657	756	772	919	0.7%	0.9%	17.5%	21.6%	**12.6%**	**15.5%**
Pleasant Valley west of SR 49	729	785	1000	1090	1.5%	1.6%	37.2%	38.9%	**26.8%**	**28.0%**
				AVERAGE	***0.7%***	***0.7%***	***18.3%***	***18.1%***	***13.2%***	***13.0%***

Source: El Dorado County Traffic Model and PRISM Engineering

Using the annual growth rate calculated from the model, this was applied for 18 years growth over the existing condition to get the factor to multiply by the existing traffic count data collected in Year 2018, to convert to Year 2035 volumes. The average growth rate per year was 0.7% for either the am or pm peak hour in the study area. The average increase on study area roadways was 13.2% for the am peak, and 13% for the pm peak, as shown in Table 14. Even still, PRISM Engineering utilized specific growth rates for different parts of the Missouri Flat Road and Pleasant Valley Road corridors as shown in the table, so that the benefit of the Diamond Springs Parkway installation would be realized with lowered volumes on these roadway sections (due to reassignment of traffic as reflected in the County' s traffic model).

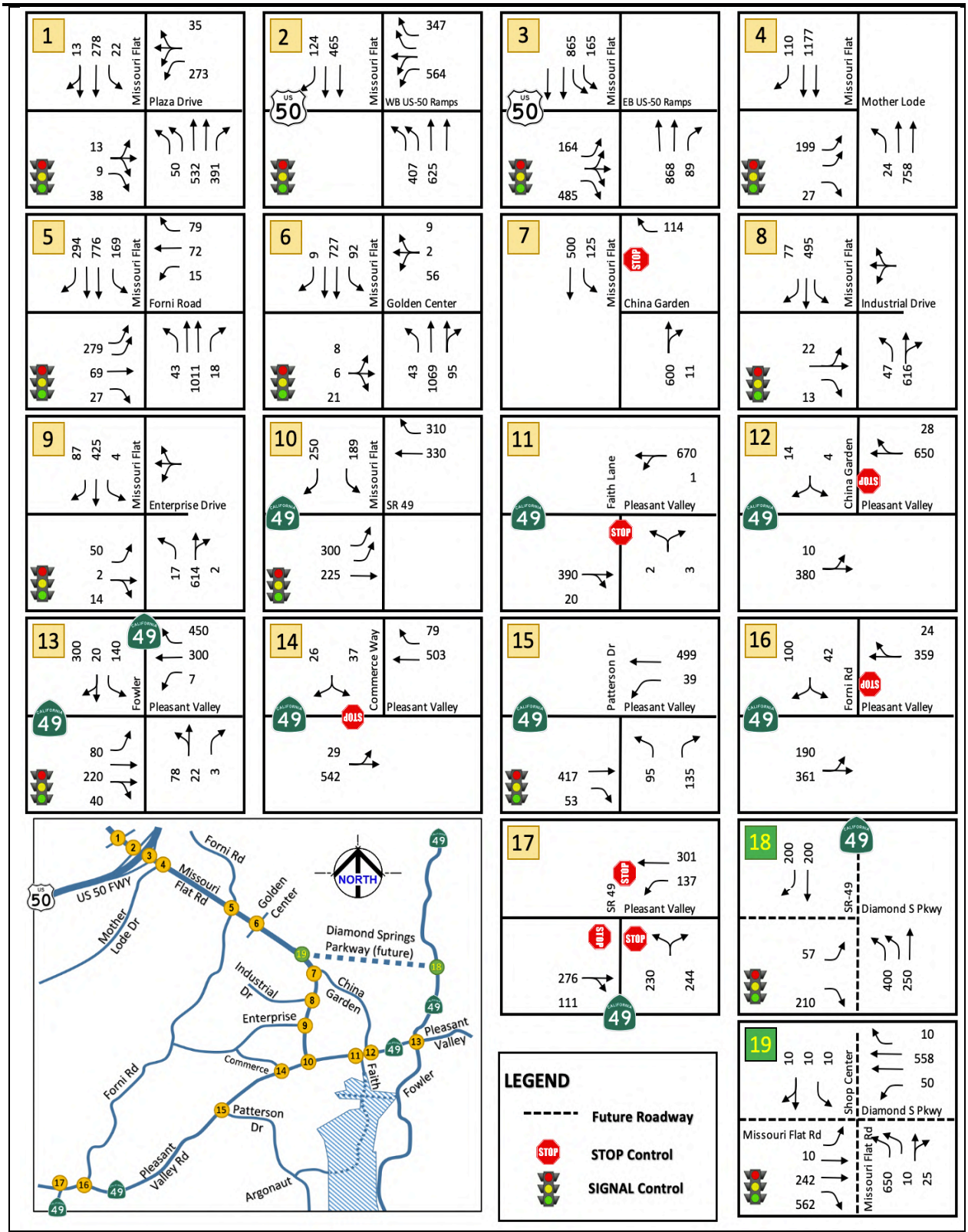


Figure 14 AM Year 2027 Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

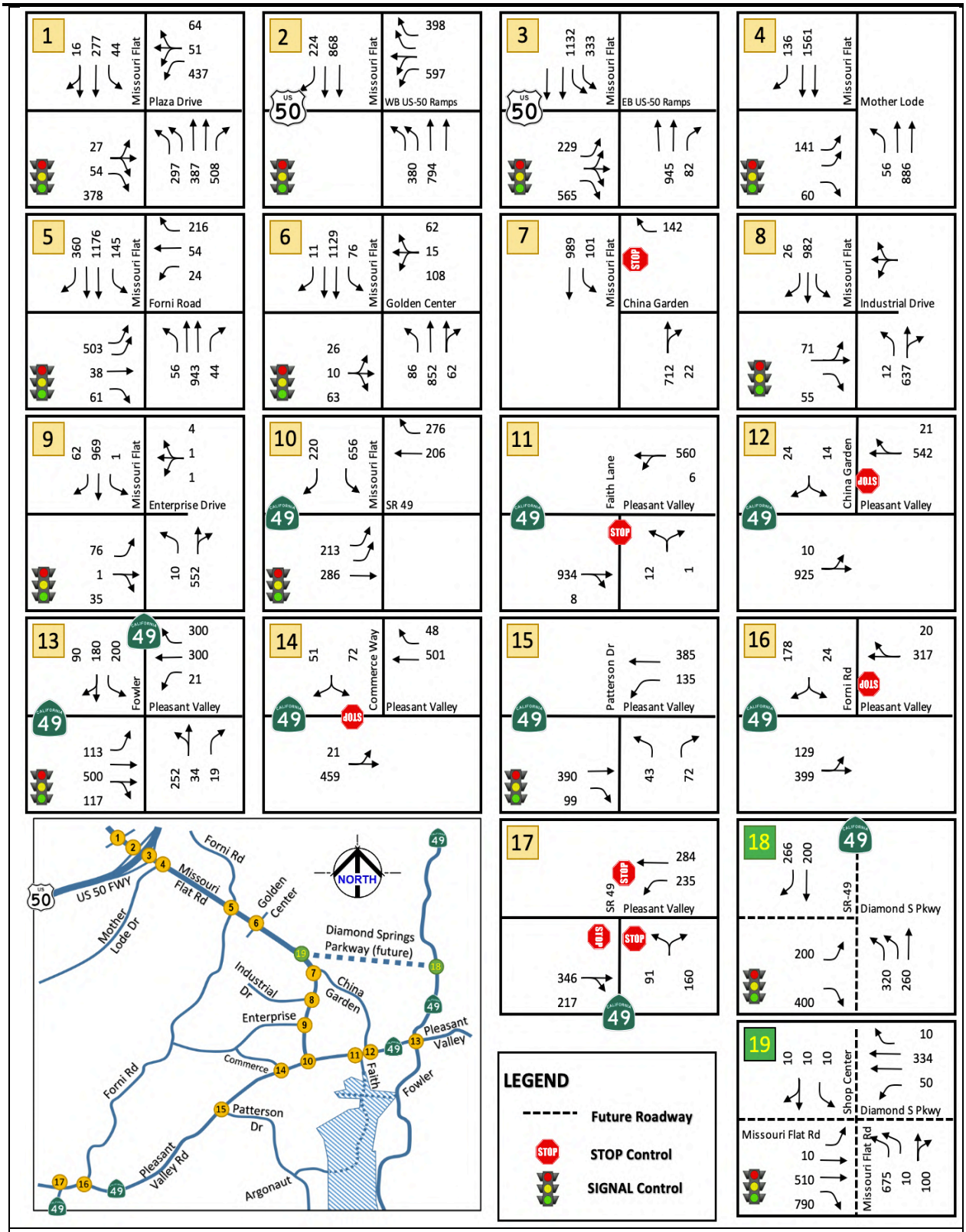


Figure 15 PM Year 2027 Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

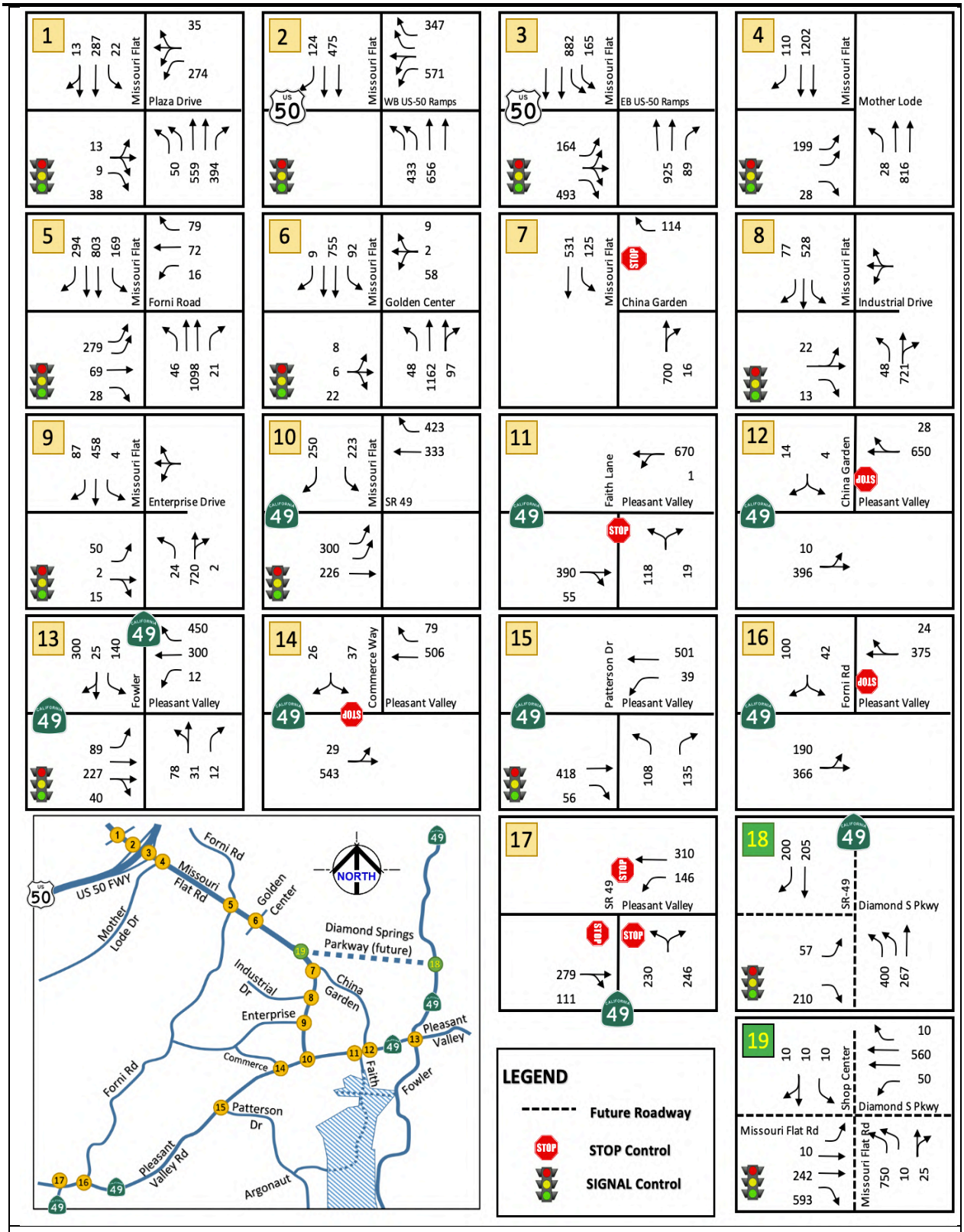


Figure 16 AM Year 2027 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

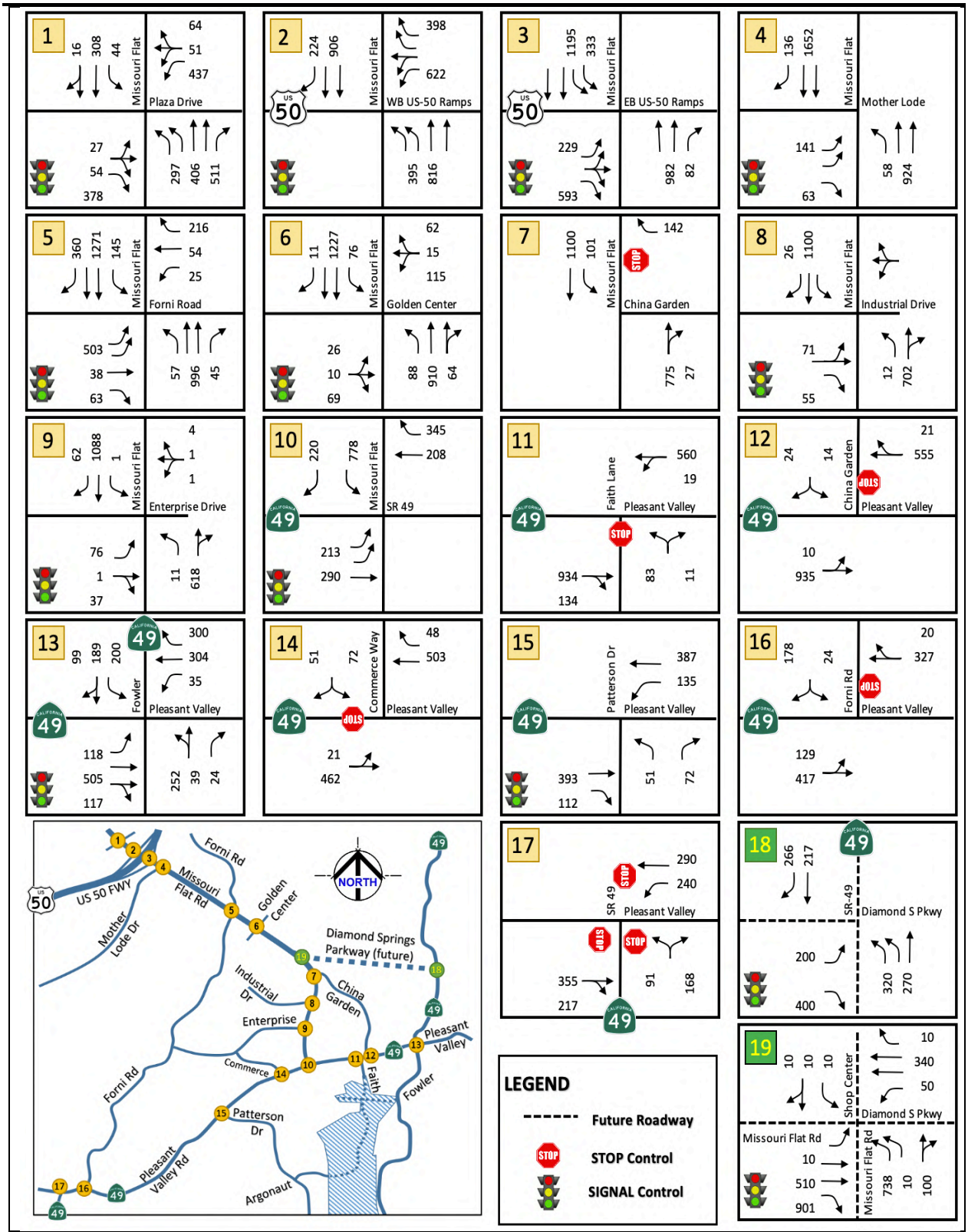


Figure 17 PM Year 2027 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

Table 14. Year 2027 Plus Project Intersections Level of Service Summary

	INTERSECTION LOCATION	Control	YEAR 2027 AM Peak				YEAR 2027 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	20.8	C	21.7	C	28.4	C	32.7
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.8	B	15.8	B	17.3	B	17.4
3	Missouri Flat Rd at US 50 EB Ramps	S	B	17.4	B	17.4	C	21.9	C	23.9
4	Missouri Flat Rd at Mother Lode Dr	S	A	9.5	A	9.8	B	15.6	B	15.6
5	Missouri Flat Rd at Forni Rd	S	C	23.7	C	25.3	C	33.1	D	37.5
6	Missouri Flat Rd at Golden Center Dr	S	C	31.5	C	31.5	C	31.1	D	50.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.2	A	2.2	A	2.0	A	2.0
		WB	C	15.7	C	18.2	C	20.2	C	22.8
8	Missouri Flat Rd at Industrial Dr	S	A	4.1	A	4.3	A	6.6	A	8.6
9	Missouri Flat Rd at Enterprise Dr	S	A	3.7	A	4.5	A	8.1	A	8.9
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	12.9	B	13.2	B	13.9	C	24.4
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	5.4	A	0.4	B	10.5
		NB	C	15.4	E	48.1	E	41.7	F	191
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.3	A	0.3	A	0.7	A	0.7
		SB	C	16.0	C	16.1	D	25.8	D	26.7
13	Pleasant Valley Rd at SR 49 N / Fowler	S	B	14.5	B	15.5	C	21.5	C	21.5
14	Pleasant Valley Rd at Commerce Way	TW	A	1.5	A	1.5	A	3.1	A	3.1
		SB	C	23.5	C	23.5	D	26.3	D	26.5
15	Pleasant Valley Rd at Patterson Dr	S	A	7.5	A	8.1	A	7.4	A	7.4
16	Pleasant Valley Rd at Forni Rd	TW	A	4.9	A	5.0	A	4.1	A	4.1
		SB	D	25.1	D	26.2	C	16.3	C	16.8
17	Pleasant Valley Rd at SR 49 S	AW	F	56.7	F	58.9	D	28.4	D	31.0
18	Diamond Springs Parkway at SR 49	S	B	11.0	B	11.3	B	12.3	B	12.9
19	Diamond Springs Pkwy at Missouri Flat	S	B	15.2	B	15.2	B	17.3	B	19.1

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Source: PRISM Engineering and HCM 2010 calculation in Synchro and/or SimTraffic

It can be seen from Table 14 that there is only one intersection in the Year 2027 pm peak hour with a side street level of service at LOS F conditions when the project traffic is added in: Pleasant Valley Road at Faith Lane, which provides primary access to the project site.

For this Year 2027 scenario, one intersection (#11) had LOS F side street delay for the pm peak hour plus project scenario. There was a slight lowering of volumes on Missouri Flat Road after installation of the Diamond Springs Parkway, which results in some rerouting of through traffic to the new parkway, away from Missouri Flat Road and Pleasant Valley Road. Intersection #18 had LOS F conditions for the am peak hour.

Table 15. Year 2027 Scenarios Roadway Segment Level of Service Summary

	ARTERIAL SEGMENT LOCATION	Road Type	SIMTRAFFIC ARTERIAL SEGMENT ANALYSIS, HCM 2010											
			Year 2027 AM Peak						Year 2027 PM Peak					
			No PROJ			w/PROJ			No PROJ			w/PROJ		
			LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed
1	Missouri Flat Plaza to US 50 WB Ramps	4AD	B	17.2	9	B	19.4	10	C	24.3	5	D	35.7	5
2	Missouri Flat US 50 WB Ramps to EB Ramps	4AD	A	9.0	15	B	13.6	13	A	6.2	19	B	19.9	9
3	Missouri Flat US 50 EB Ramps to Mother Lode	4AD	A	9.4	10	B	10.4	8	B	10.1	8	C	21.2	7
4	Missouri Flat Mother Lode to Forni	4AD	A	4.3	18	A	6.6	14	A	5.7	17	A	9.1	12
5	Missouri Flat Forni to Golden Center	4AD	C	23.0	11	C	23.9	10	C	30.3	7	D	39.1	6
6	Missouri Flat Golden Center to China Garden	2A	B	12.8	12	B	12.4	12	B	10.5	13	C	16.8	10
7	Missouri Flat China Garden to Industrial	2A	A	1.6	24	A	1.7	24	A	2.0	23	A	3.3	19
8	Missouri Flat Industrial to Enterprise	2A	A	1.4	39	A	1.4	39	A	1.3	40	A	2.6	35
9	Missouri Flat Enterprise to Pleasant Valley	2A	A	2.0	38	A	1.8	37	A	1.9	39	A	2.5	38
10	Pleasant Valley Missouri Flat to Faith	2A	B	12.2	26	B	14.0	24	B	12.5	24	B	12.7	24
11	Pleasant Valley Faith to China Garden	2A	A	3.5	35	A	4.0	34	A	3.5	39	A	4.0	37
12	Pleasant Valley China Garden to Fowler	2A	A	3.7	32	A	4.3	31	A	3.7	37	A	4.2	33
13	Pleasant Valley Missouri Flat to Commerce	2A	A	3.3	35	A	3.4	35	A	2.5	40	A	2.7	39
14	Pleasant Valley Commerce to Patterson	2A	A	7.1	35	A	7.6	34	A	7.6	34	A	6.5	36
15	Pleasant Valley Patterson to Forni	2A	A	7.2	19	A	8.3	18	A	6.1	20	A	6.0	21
16	Pleasant Valley Forni to SR 49 (south)	2A	B	11.0	14	B	11.4	14	B	10.4	15	B	11.2	14

Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

Table 15 shows the capacity analysis results for link segments, which are at an acceptable LOS C or better condition without the project, and LOS D or better with the project. The values in Table 15 are the street segment level of service in the study area for the Year 2027 scenarios.

In the tables that follow, the signalized intersections were analyzed for queue lengths on left turn pockets for all approaches to determine if the estimated queues would exceed the existing storage length of these turn pockets. If so, the table reports this problem as a YES in a red highlighted cell in Table 16 or Table 17.

Table 16. Year 2027 AM Peak Signalized Intersection Queues Summary

		AM Year 2027				AM Year 2027+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	63	NO	NBL	330	53	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	180	YES	NBL	150	157	YES
		WBL	500	259	NO	WBL	500	204	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	104	NO	SBL	150	124	NO
		EBR	600	199	NO	EBR	600	160	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	189	NO	EBL	220	138	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	136	NO	EBL	200	152	NO
6	Missouri Flat Rd at Golden Center Dr	NBL	175	124	NO	NBL	175	95	NO
8	Missouri Flat Rd at Industrial Dr	NBL	75	43	NO	NBL	75	50	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	26	NO	NBL	90	27	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	140	NO	EBL	150	140	NO
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	88	NO	EBL	225	90	NO
15	Pleasant Valley Rd at Patterson Dr	NBR	200	98	NO	NBR	200	88	NO
18	Diamond Springs Parkway at SR 49	NBL	200	100	NO	NBL	200	164	NO
19	Diamond Springs Pkwy at Missouri Flat	NBL	200	170	NO	NBL	200	182	NO

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Table 17. Year 2027 PM Peak Signalized Intersection Queues Summary

		PM Year 2027				PM Year 2027+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	154	NO	NBL	330	151	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	187	YES	NBL	150	163	YES
		WBL	500	255	NO	WBL	500	220	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	167	YES	SBL	150	210	YES
		EBR	600	288	NO	EBR	600	235	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	211	NO	EBL	220	122	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	235	YES	EBL	200	213	YES
6	Missouri Flat Rd at Golden Center Dr	NBL	175	172	NO	NBL	175	145	NO
8	Missouri Flat Rd at Industrial Dr	NBL	75	24	NO	NBL	75	37	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	30	NO	NBL	90	25	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	133	NO	EBL	150	115	NO
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	104	NO	EBL	225	168	NO
15	Pleasant Valley Rd at Patterson Dr	NBR	200	76	NO	NBR	200	73	NO
18	Diamond Springs Parkway at SR 49	NBL	200	117	NO	NBL	200	111	NO
19	Diamond Springs Pkwy at Missouri Flat	NBL	200	180	NO	NBL	200	199	NO

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Intersections #18 and #19 are now operative in this scenario because they are the future intersections that would connect the future Diamond Springs Parkway between Missouri Flat Road on its west end with

SR 49 on the east end. Three of the intersections had turn pocket overflow issues without the project for the 95th percentile calculations in the HCM 2010 methodology (Missouri Flat Road at US 50 WB Ramp NBL, Missouri Flat Road at US 50 EB Ramp SBL, and at Forni Road EBL). These overflows are identified in the tables with red highlighted cells for both the am and pm peak hour time periods. When the pm peak hour project traffic is added in, there are no changes to the overflow status.

Traffic Signal Warrants, Year 2027 Scenarios

Table 18 reports the signal warrant analysis results for the Year 2027 am and pm peak hour scenarios (with and without project). Table 18 shows that signal warrants are met for four out of the six intersections in the Year 2027 scenarios. The California MUTCD stipulates thresholds for traffic conditions when a signal may be warranted based on the traffic volumes. The warrant for peak hour volumes was used in this report (Section 4C.04 Warrant 3, Peak Hour[11]). Based on this warrant, and in the Year 2027 scenarios, signals are currently warranted at five of the eight unsignalized study area intersections, even without the project, as shown in Table 18.

Project Impacts for the Year 2027 plus Project Scenario

- Intersection Level of Service: Within acceptable County thresholds with the exception of two unsignalized intersections shown in Table 14 with red highlighted cells including:
    - Pleasant Valley Road and Faith Lane at LOS B overall for Year 2027 pm peak hour plus project, but LOS F for side street (191 secs of average delay) with the full project impact.
    - Pleasant Valley Road and SR 49 S is at LOS F for Year 2027 am peak hour plus project, and a signal is warranted at this intersection. The intersection level of service remains at LOS F with the project with a slightly higher delay (58.9 secs of average delay compared to 56.7 without the project).
- SIMTRAFFIC Arterial Segment Level of Service: All locations are at LOS D or better conditions with this microsimulation methodology. No further mitigations necessary.
- Signalized Intersection Queues: The project adds to the 95% queue overflows. See Tables 16 and 17 for red cells where a problem exists and would also be slightly additionally impacted by the project, lengthening the queues by just a few feet (not significant increase). The queues clear quickly enough without significantly impacting LOS at adjacent intersections.
- Signal Warrants: Significant. Warrants met at four of the six unsignalized intersections as shown in Table 18.

[11]The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Guidance: 06 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.

Table 18. Signal Warrants Status for Year 2027 AM & PM Peak Hour Scenarios

Intersection	AM for YEAR 2027	AM+PROJ for YEAR 2027	PM for YEAR 2027	PM+PROJ for YEAR 2027
Missouri Flat Rd at China Garden Rd	YES	YES	YES	YES
Pleasant Valley Rd at Faith Ln	NO	NO	NO	NO
Pleasant Valley Rd at China Garden Rd	NO	NO	NO	NO
Pleasant Valley Rd at Commerce Way	NO	NO	YES	YES
Pleasant Valley Rd at Forni Rd	YES	YES	YES	YES
Pleasant Valley Rd at SR 49 South	YES	YES	YES	YES

Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis (see Appendix A.11 for details on specific volumes used in the signal warrant analysis, as well as various criteria for warrants depending on two lane road, four lane road, six or more lane roads, etc).

VI. Cumulative 2035, Plus Project Conditions

Nearby Roadway and Development Projects

The same CIP improvements assumed to be in place for the Year 2027 study area roadway network were assumed to be in place in these Year 2035 scenarios. These include the Diamond Springs Parkway. The Year 2035 growth assumptions in the County's travel demand model were applied here, along with the full 100% of the project's trip generation. Traffic growth rates applied to existing counts were adjusted based on the specific percentage increase or decrease for link segments in the County's traffic model output results between the Year 2010 model and the Year 2035 model, as explained in the next paragraphs.

Calculation of Future Growth for Background Traffic.

The calculation of the Year 2035 background traffic was explained in detail previously in the Year 2027 scenarios section (see *Section V. Near Term Future Year 2027 Conditions* of this report for a detailed discussion on this, as well as *Table 13 Growth Rate Calculations for Study Area Roadways* which documents the roadway volumes and growth rates calculated for all scenario years to determine specific growth rates by link segment).

PRISM Engineering obtained detailed output plots from the El Dorado County Department of Transportation staff[12] from their Travel Demand Forecast Model. The average overall growth rate per year was 0.7% for either the am or pm peak hour in the study area. The average increase on study area roadways was 13.2% for the am peak, and 13% for the pm peak, as shown in Table 13, but PRISM Engineering used the specific growth rates for each specific roadway segment or intersection to calculate future growth locally and not globally. By doing this, the changes in traffic patterns after the installation of the Diamond Springs Parkway could be realized, as the County's traffic model did show Year 2035 traffic volumes on Missouri Flat Road south of China Garden Road to be slightly less than the Year 2010 model output, reflecting a shifting of traffic from this route over to the Diamond Springs Parkway, as expected.

The turning movement volumes for each of the nineteen study intersections are detailed in the following four figures for this Year 2035 scenario. Figures 18 and 19 show the Year 2035 traffic projections only, and 20 and 21 show the Year 2035 plus Project turning movement volumes.

[12] Model plots received from DOT via Senior Civil Engineer Natalie Porter via email. Summarized in Appendix.

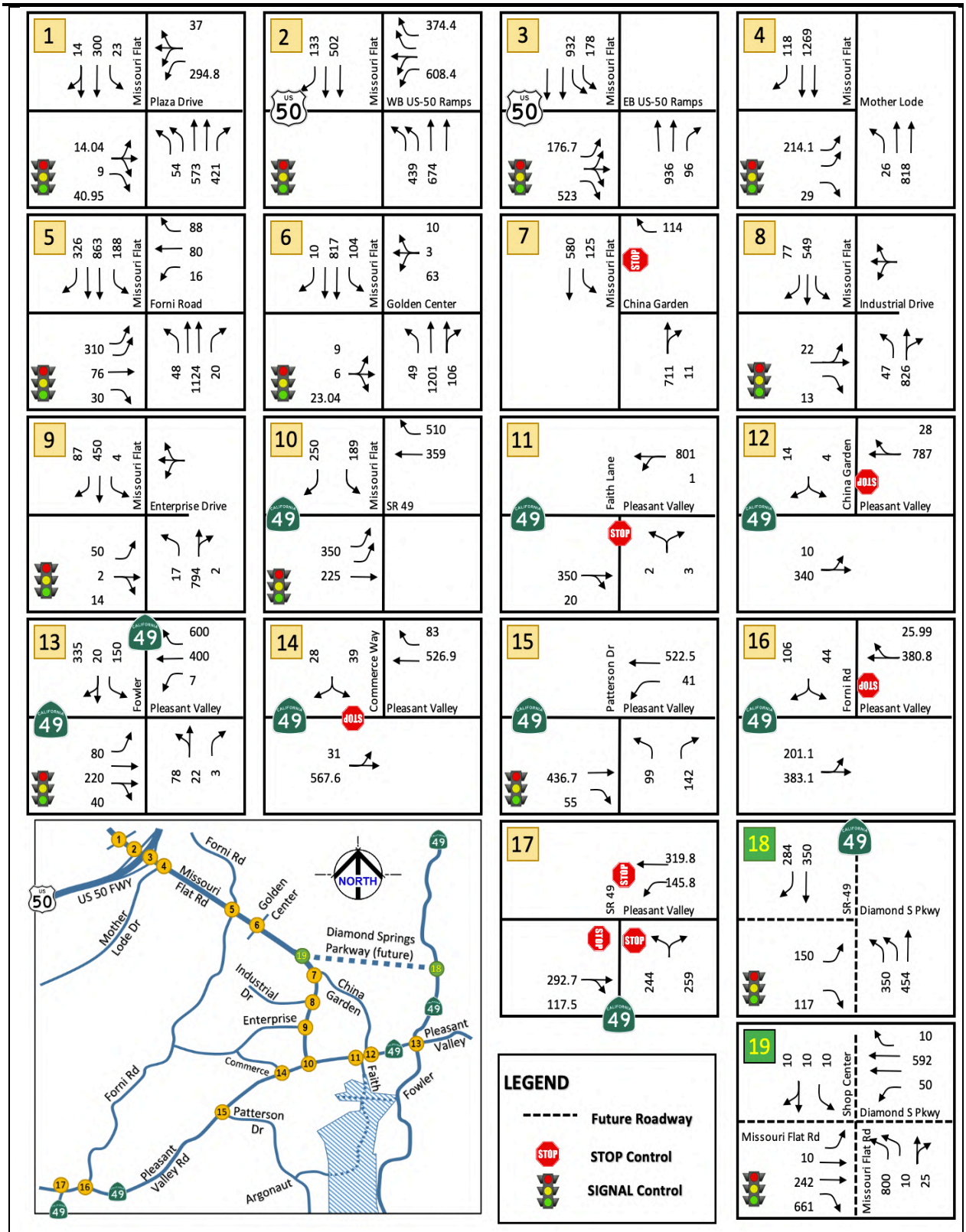


Figure 18. AM Year 2035 Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

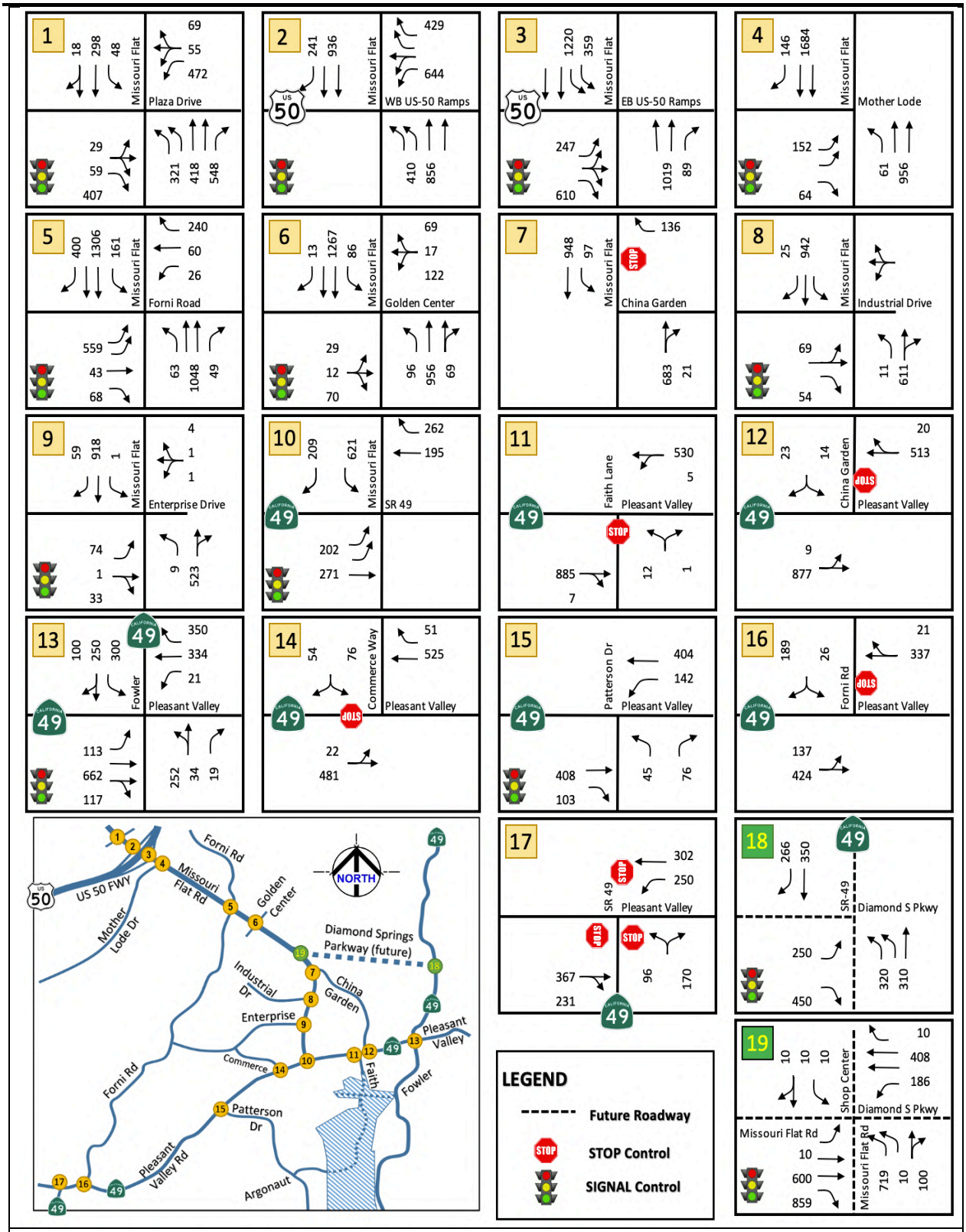


Figure 19. PM Year 2035 Only Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

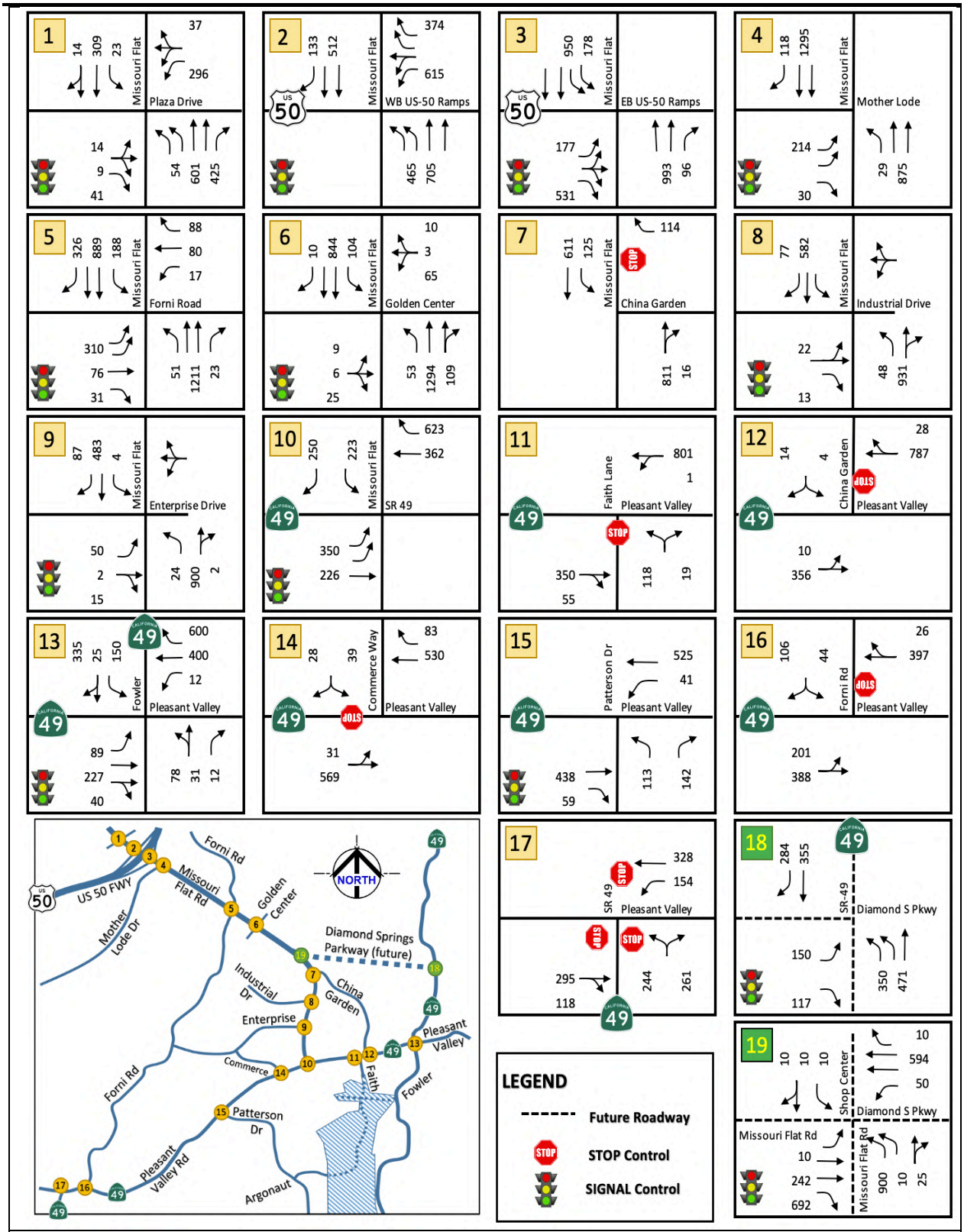


Figure 20. AM Year 2035 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

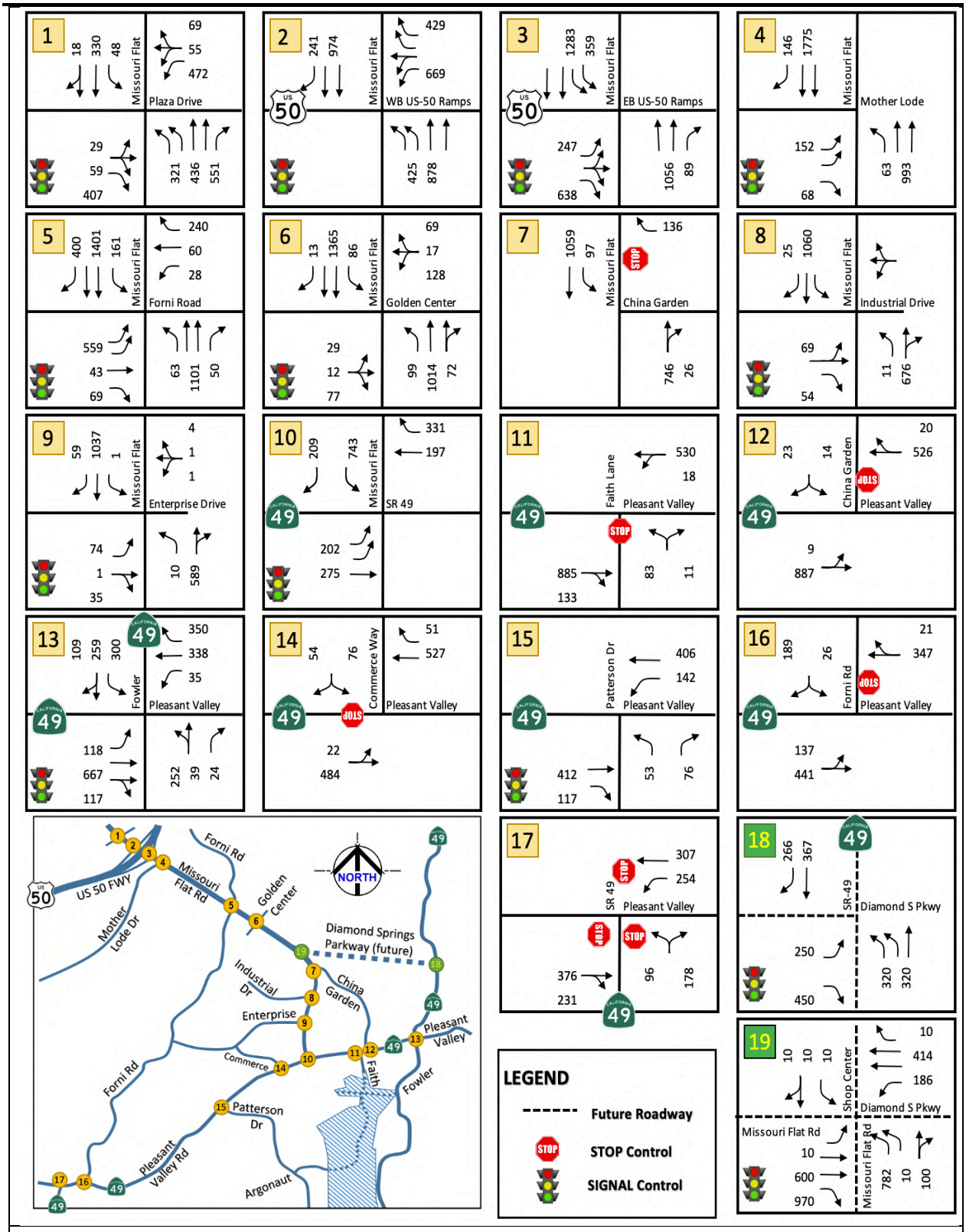


Figure 21. PM Year 2035 plus Project Peak Hour Turning Movements

Source: PRISM Engineering and El Dorado County

Table 19. Year 2035 Plus Project Intersections Level of Service Summary

	INTERSECTION LOCATION	Control	YEAR 2035 AM Peak				YEAR 2035 PM Peak			
			No PROJ		w/PROJ		No PROJ		w/PROJ	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Missouri Flat Rd at Plaza Dr	S	C	21.7	C	21.7	D	46.6	D	46.6
2	Missouri Flat Rd at US 50 WB Ramps	S	B	15.9	B	15.9	C	25.5	C	34.2
3	Missouri Flat Rd at US 50 EB Ramps	S	B	14.2	B	18.0	C	30.3	D	39.0
4	Missouri Flat Rd at Mother Lode Dr	S	B	10.5	B	10.8	B	14.3	B	16.3
5	Missouri Flat Rd at Forni Rd	S	C	29.9	C	30.2	C	34.2	D	49.4
6	Missouri Flat Rd at Golden Center Dr	S	C	28.8	C	31.0	D	48.6	D	48.6
7	Missouri Flat Rd at China Garden Rd	TW	A	2.2	A	2.3	A	1.9	A	1.9
		WB	C	18.3	C	21.8	C	18.9	C	21.1
8	Missouri Flat Rd at Industrial Dr	S	A	4.1	A	7.9	A	2.6	A	4.5
9	Missouri Flat Rd at Enterprise Dr	S	A	4.6	A	6.0	A	3.7	A	3.7
10	Missouri Flat Rd at Pleasant Valley Rd	S	B	14.4	B	19.6	B	13.8	C	22.9
11	Pleasant Valley Rd at Faith Ln	TW	A	0.1	A	6.8	A	0.4	A	8.3
		NB	C	16.3	F	65.2	E	36.6	F	142
12	Pleasant Valley Rd at China Garden Rd	TW	A	0.4	A	0.4	A	0.7	A	0.7
		SB	C	18.4	C	18.5	C	23.6	C	24.3
13	Pleasant Valley Rd at SR 49 N / Fowler	S	B	18.8	C	22.7	C	33.5	D	37.9
14	Pleasant Valley Rd at Commerce Way	TW	A	1.7	A	1.7	A	3.5	A	3.6
		SB	D	25.9	D	26.0	D	29.9	D	30.3
15	Pleasant Valley Rd at Patterson Dr	S	A	8.1	A	8.1	A	7.8	A	8.0
16	Pleasant Valley Rd at Forni Rd	TW	A	5.5	A	5.7	A	4.5	A	4.5
		SB	D	30.1	D	32.0	C	18.2	C	18.8
17	Pleasant Valley Rd at SR 49 S	AW	F	76.1	F	78.8	E	37.8	E	41.1
18	Diamond Springs Parkway at SR 49	S	B	11.3	B	11.5	B	14.5	B	17.4
19	Diamond Springs Pkwy at Missouri Flat	S	B	16.5	B	17.6	C	33.9	C	33.9

Control: S=Signal, AW=All-Way Stop, TW=Stop Sign Side Street, NB=NB approach Stop

NOTE: Calculations based on HCM 2010 methdology for intersection level of service (signal, two-way, and all-way stop)

Source: PRISM Engineering and HCM 2010 calculation in Synchro and/or SimTraffic

For this Year 2035 scenario, there was a slight lowering of volumes on Missouri Flat Road after installation of the Diamond Springs Parkway, resulting in some rerouting of through traffic to the new parkway. It can be seen from Table 19 that when the project traffic is added in, Pleasant Valley Road at Faith Lane goes from an acceptable LOS E condition to an unacceptable LOS F condition. This is the intersection that would provide primary access to the project site.

Table 20 shows the Year 2035 capacity analysis results for *link segments* using the microsimulation method (using the SimTraffic software) as defined in the appendix. Missouri Flat Road was assumed to be widened from 2A to 4AD (four lanes as shown in Table 20) and capacity therefore increased. Also, there was a lowering of volumes on Missouri Flat Road and Pleasant Valley Road on account of the Diamond Springs Parkway diverting some regional through traffic away from these sections of these roads. The Diamond Springs Parkway will connect Missouri Flat Road on the west to SR 49 on the east. In addition, there are some roads which will interface with Diamond Springs Parkway (DSP) between these two intersections (Intersections #18 and #19 in this study), such as Throwita Way on the south side and another street on the north side of DSP at the same location. It was assumed that a small portion of traffic

would enter and leave at these locations in the analyses. For this reason, volumes between intersections #18 and #19 will not exactly match up because of this condition.

Table 20. Year 2035 Scenarios Roadway Segment Level of Service Summary

	ARTERIAL SEGMENT LOCATION	Road Type	SIMTRAFFIC ARTERIAL SEGMENT ANALYSIS, HCM 2010											
			Year 2035 AM Peak						Year 2035 PM Peak					
			No PROJ			w/PROJ			No PROJ			w/PROJ		
			LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed	LOS	AVG Delay	AVG Speed
1	Missouri Flat Plaza to US 50 WB Ramps	4AD	B	20.0	9	B	19.8	9	D	51.4	3	D	38.1	4
2	Missouri Flat US 50 WB Ramps to EB Ramps	4AD	B	14.9	12	B	14.7	12	C	31.3	6	D	46.8	4
3	Missouri Flat US 50 EB Ramps to Mother Lode	4AD	B	11.3	8	B	14.5	9	C	25.9	6	C	31.8	6
4	Missouri Flat Mother Lode to Forni	4AD	A	7.5	13	A	8.2	13	B	11.7	11	B	13.7	9
5	Missouri Flat Forni to Golden Center	4AD	C	28.7	9	C	30.1	8	C	33.2	7	D	40.3	6
6	Missouri Flat Golden Center to China Garden	4AD	B	12.9	12	B	15.5	11	C	25.7	8	B	19.8	10
7	Missouri Flat China Garden to Industrial	4AD	A	1.3	25	A	1.6	24	A	2.5	19	A	2.0	24
8	Missouri Flat Industrial to Enterprise	4AD	A	2.0	38	A	1.4	40	A	1.2	40	A	1.2	40
9	Missouri Flat Enterprise to Pleasant Valley	4AD	A	1.8	38	A	1.7	40	A	1.8	39	A	2.0	39
10	Pleasant Valley Missouri Flat to Faith	2A	B	15.0	23	C	18.7	19	B	12.1	25	B	10.3	27
11	Pleasant Valley Faith to China Garden	2A	A	3.7	35	A	3.8	34	A	3.5	39	A	3.5	40
12	Pleasant Valley China Garden to Fowler	2A	A	3.8	33	A	4.0	31	A	3.7	36	A	3.7	35
13	Pleasant Valley Missouri Flat to Commerce	2A	A	3.5	35	A	3.8	34	A	2.6	41	A	2.4	41
14	Pleasant Valley Commerce to Patterson	2A	A	6.7	35	A	7.1	34	A	7.8	34	A	6.1	36
15	Pleasant Valley Patterson to Forni	2A	A	7.8	18	A	8.3	17	A	6.9	19	A	6.5	20
16	Pleasant Valley Forni to SR 49 (south)	2A	B	12.1	13	B	13.4	12	B	11.5	14	B	10.4	15

Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

In the tables that follow, the signalized intersections were analyzed for queue lengths on left turn pockets for all approaches to determine if the estimated queues would exceed the existing storage length of these turn pockets. If so, the table reports this problem as a YES in a red highlighted cell in Table 21 or Table 22. Intersections #18 and #19 are operative in this scenario because they are the future intersections connecting the Diamond Springs Parkway into the existing street network from Missouri Flat Road on its west end to SR 49 on the east end. Five of the intersections had turn pocket overflow issues in the pm peak hour without the project for the 95th percentile calculations in the HCM 2010 methodology (Missouri Flat Road at: US 50 WB Ramp NBL, US 50 EB Ramp SBL, Forni Road EBL, Golden Center Drive NBL, and Pleasant Valley Road at: SR49/Fowler EBL). These overflows are identified in the tables with red highlighted cells for both the am and pm peak hour time periods. These five intersections are expected to have some turn pocket overflow with or without the project.

Traffic Signal Warrants, Year 2035 Scenarios

Table 23 reports the signal warrant analysis results for the Year 2035 am and pm peak hour scenarios (with and without project). Table 23 shows that signal warrants are met for each of the four Year 2035 scenarios, primarily for pm peak hour.

Table 21. Year 2035 AM Peak Signalized Intersection Queues Summary

		AM Year 2035				AM Year 2035+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	61	NO	NBL	330	61	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	159	YES	NBL	150	169	YES
		WBL	500	210	NO	WBL	500	185	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	112	NO	SBL	150	120	NO
		EBR	600	175	NO	EBR	600	232	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	127	NO	EBL	220	110	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	174	NO	EBL	200	171	NO
6	Missouri Flat Rd at Golden Center Dr	NBL	175	77	NO	NBL	175	125	NO
8	Missouri Flat Rd at Industrial Dr	NBL	75	52	NO	NBL	75	52	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	36	NO	NBL	90	18	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	153	YES	EBL	150	180	YES
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	117	NO	EBL	225	81	NO
15	Pleasant Valley Rd at Patterson Dr	NBR	200	111	NO	NBR	200	101	NO
18	Diamond Springs Parkway at SR 49	NBL	200	134	NO	NBL	200	140	NO
19	Diamond Springs Pkwy at Missouri Flat	NBL	200	170	NO	NBL	200	197	NO

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Table 22. Year 2035 PM Peak Signalized Intersection Queues Summary

		PM Year 2035				PM Year 2035+Project			
	INTERSECTION LOCATION	Lane	Length	95% Queue	Over?	Lane	Length	95% Queue	Over?
1	Missouri Flat Rd at Plaza Dr	NBL	330	159	NO	NBL	330	162	NO
2	Missouri Flat Rd at US 50 WB Ramps	NBL	150	162	YES	NBL	150	165	YES
		WBL	500	267	NO	WBL	500	345	NO
3	Missouri Flat Rd at US 50 EB Ramps	SBL	150	201	YES	SBL	150	207	YES
		EBR	600	303	NO	EBR	600	409	NO
4	Missouri Flat Rd at Mother Lode Dr	EBL	220	105	NO	EBL	220	145	NO
5	Missouri Flat Rd at Forni Rd	EBL	200	246	YES	EBL	200	243	YES
6	Missouri Flat Rd at Golden Center Dr	NBL	175	243	YES	NBL	175	243	YES
8	Missouri Flat Rd at Industrial Dr	NBL	75	62	NO	NBL	75	35	NO
9	Missouri Flat Rd at Enterprise Dr	NBL	90	22	NO	NBL	90	19	NO
10	Missouri Flat Rd at Pleasant Valley Rd	EBL	150	121	NO	EBL	150	93	NO
13	Pleasant Valley Rd at SR 49 N / Fowler	EBL	225	305	YES	EBL	225	270	YES
15	Pleasant Valley Rd at Patterson Dr	NBR	200	75	NO	NBR	200	73	NO
18	Diamond Springs Parkway at SR 49	NBL	200	128	NO	NBL	200	109	NO
19	Diamond Springs Pkwy at Missouri Flat	NBL	200	187	NO	NBL	200	191	NO

Source: PRISM Engineering and Synchro 9.0 HCM 2010 methods

Table 23. Signal Warrants for Year 2035 AM & PM Peak Hour Scenarios

Intersection	AM for YEAR 2035	AM+PROJ for YEAR 2035	PM for YEAR 2035	PM+PROJ for YEAR 2035
Missouri Flat Rd at China Garden Rd	YES	YES	YES	YES
Pleasant Valley Rd at Faith Ln	NO	NO	NO	NO
Pleasant Valley Rd at China Garden Rd	NO	NO	NO	NO
Pleasant Valley Rd at Commerce Way	NO	NO	YES	YES
Pleasant Valley Rd at Forni Rd	YES	YES	YES	YES
Pleasant Valley Rd at SR 49 South	YES	YES	YES	YES

Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis (see Appendix A.11 for details on specific volumes used in the signal warrant analysis, as well as various criteria for warrants depending on two lane road, four lane road, six or more lane roads, etc).

Project Impacts for this scenario

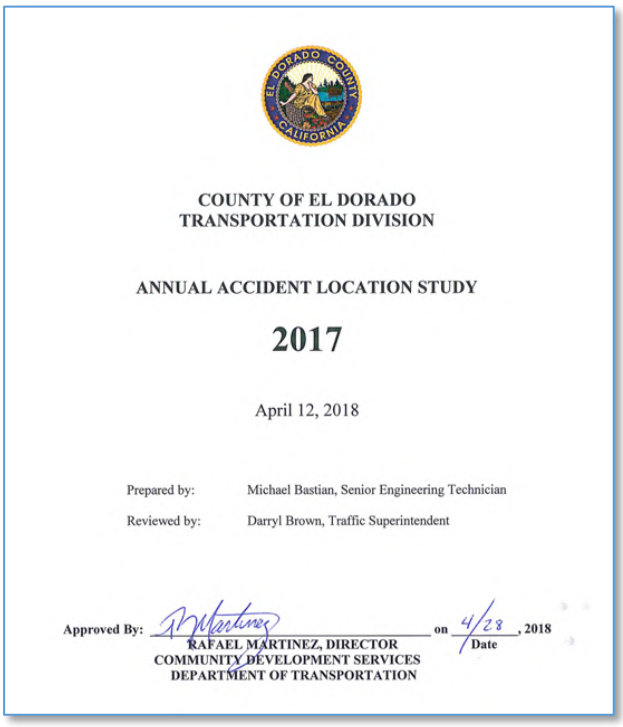
- Intersection Level of Service: Within acceptable County thresholds with the exception of two unsignalized intersections shown in Table 19 with red highlighted cells including:
  - Pleasant Valley Road and Faith Lane at LOS A overall for Year 2035 pm peak hour plus project, but LOS F for side street (142 secs of average delay) with the full project impact. Mitigation is achieved by construction of a roundabout.
  - Pleasant Valley Road and SR 49 S is at LOS F for Year 2035 am peak hour without the project (delay=76.1). A signal is warranted at this intersection. When the project traffic is added in the delay increases to 78.8 seconds.
- SIMTRAFFIC Arterial Segment Level of Service: All locations are at LOS D or better conditions with this microsimulation methodology. No further mitigations necessary.
- Signalized Intersection Queues: The project adds to the 95% queue overflows. See Tables 21 and 22 for red cells where a problem exists and would also be slightly additionally impacted by the project, lengthening the queues by as much as one additional vehicle length (not significant increase). However, in the pm peak hour additional locations are impacted as shown at the bridge left turn pockets entering the US 50 freeway. However, the intersection level of service as calculated by micro-simulation (see Table 19) shows a satisfactory levels of service overall (LOS B to LOS D), and these queues clear quickly enough in the microsimulation model without significantly impacting LOS at adjacent intersections.
- Signal Warrants: Significant. Warrants met at four of the six unsignalized intersections as shown in Table 23.

The California MUTCD stipulates thresholds *for* traffic conditions when a signal may be warranted based on the traffic volumes. The warrant for peak hour volumes was used in this report (Section 4C.04 Warrant 3, Peak Hour[13]). Based on this warrant, and in the Year 2035 scenarios, signals are currently warranted at five of the eight unsignalized study area intersections, even without the project, as shown in Table 23. With the project an additional signal is warranted at Faith Lane and Pleasant Valley Road.

[13]The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Guidance: 06 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.

VII. Other Considerations



COUNTY OF EL DORADO
TRANSPORTATION DIVISION

ANNUAL ACCIDENT LOCATION STUDY

2017

April 12, 2018

Prepared by: Michael Bastian, Senior Engineering Technician

Reviewed by: Darryl Brown, Traffic Superintendent

Approved By: _____ on 4/23, 2018
RAFAEL MARTINEZ, DIRECTOR
COMMUNITY DEVELOPMENT SERVICES
DEPARTMENT OF TRANSPORTATION

Accidents.

PRISM Engineering referenced the *County of El Dorado Transportation Division, Annual Accident Location Study 2017, APRIL 12, 2018* (see left) in developing the accident summary information for the study area roadways. Missouri Flat Road was identified for preliminary review in the County's Annual Accident Location Study (Chapters 1), but because the accident rate does not meet the threshold criteria as defined in the above document, or is less than 1.00 Acc/MEV for an intersection, etc., further review was deemed unnecessary. Table 24 below summarizes the accidents that did take place on Missouri Flat Road, but which overall did not meet the minimum thresholds to be a "Location Requiring Further Investigation."

In order to be considered as a "preliminary site selection" the following criteria must be met:

- Must be a site with 3 or more accidents in 2017
- Two or more accidents, one being fatal in 2017
- Sites with two or more in 2017, two or more with motorcycles within 0.25 mile section
- Sites with two or more in 2017, two or more with bicycles within 0.25 mile section
- Sites with two or more in 2017, two or more with pedestrians within 0.25 mile section
- Sections of homogeneous roadway with five (5) or more accidents of a similar type occurring within a quarter-mile section during 2017.

The list in Table 24 for Missouri Flat Road 2017 accidents shows 28 different accidents, 6 which involved injuries (total of 10 people injured); however, none were fatal. This list does not meet these set of criteria listed above, as there are no motorcycle accidents, no bike accidents, no pedestrian accidents, and no repeating patterns of accidents at the same location. The accident rate for Missouri Flat Road as reported in the document and shown in Table 24 was less than 1.0 ranging from 0.26 to 0.61.

There were no accidents on Pleasant Valley Road reported in the AALS that were also within the scope or study area of this traffic study, and were not included in Table 24.

Table 24. 2017 Accidents on Study Roadways

2017 ACCIDENT LOCATION SITES (Continued)

Road No.	Street	Mile Post	Dist (Ft)	Dir		Cross Street	Injury	Fatal	Lighting	Surface	Involved	Impair	Acc Type	CHP #
9	MISSOURI FLAT RD	1.56	0		of	PLAZA DR	0	0	DAY	WET	2	HNBD	2	20170402835
9	MISSOURI FLAT RD	1.58	100	EAST	of	PLAZA DR	0	0	DAY	WET	2	HNBD	3	20170100043
9	MISSOURI FLAT RD	1.62	12	NORTH	of	W/B US-50	0	0	DAY	DRY	2	HNBD	3	20170703237
9	MISSOURI FLAT RD	1.63	0		of	US 50 W/B	0	0	DAY	DRY	2	HNBD	4	20171203930
9	MISSOURI FLAT RD	1.63	0		of	US 50 W/B	0	0	DAY	DRY	2	HNBD	2	20171103795
9	MISSOURI FLAT RD	1.77	0		of	E/B US-50 ON-RAMP	0	0	DARK	DRY	2	DUI	4	20170402861
9	MISSOURI FLAT RD	1.77	0		of	E/B US-50	0	0	DARK	WET	2	HNBD	4	20170402812
9	MISSOURI FLAT RD	1.82	0		of	MOTHER LODE DR	0	0	DAY	WET	2	HNBD	2	20170402793
9	MISSOURI FLAT RD	1.83	60	SOUTH	of	MOTHER LODE DR	0	0	DAY	DRY	2	IMP?	3	20170102477
9	MISSOURI FLAT RD	1.89	650	SOUTH	of	US50 E/B	1	0	DAY	DRY	2	HNBD	3	20171003636
9	MISSOURI FLAT RD	1.92	100	SOUTH	of	PERKS CT	2	0	DAY	DRY	2	HNBD	4	20170703266
9	MISSOURI FLAT RD	1.94	185	SOUTH	of	PERKS CT	1	0	DARK	DRY	3	HNBD	3	20171103757
9	MISSOURI FLAT RD	2.01	10	SOUTH	of	MARANATHA LN	0	0	DAY	WET	2	HNBD	10	20170202535
9	MISSOURI FLAT RD	2.28	75	NORTH	of	FORNI RD	1	0	DAY	DRY	2	HNBD	3	20170703304
9	MISSOURI FLAT RD	2.29	0	AT	of	FORNI RD	4	0	DARK	WET	3	HNBD	2	20170102433
9	MISSOURI FLAT RD	2.35	300	SOUTH	of	FORNI RD	0	0	DAY	DRY	2	IMP?	3	20170402887
9	MISSOURI FLAT RD	2.35	300	SOUTH	of	FORNI RD	0	0	DAY	DRY	2	HNBD	2	20170402850
9	MISSOURI FLAT RD	2.60	528	SOUTH	of	GOLDEN CENTER DR	0	0	DAY	DRY	2	HNBD	2	20170903472
9	MISSOURI FLAT RD	2.69	10	NORTH	of	HALYARD LN	0	0	DARK	DRY	2	HNBD	3	20171203956
9	MISSOURI FLAT RD	2.98	310	SOUTH	of	CHINA GARDEN RD	0	0	DAY	DRY	2	HNBD	4	20170703249
9	MISSOURI FLAT RD	3.02	25	NORTH	of	INDUSTRIAL DR	0	0	DAY	DRY	2	IMP?	3	20171203965
9	MISSOURI FLAT RD	3.04	60	SOUTH	of	INDUSTRIAL DR	1	0	DAY	DRY	1	HNBD	5	20170703247
9	MISSOURI FLAT RD	3.05	80	SOUTH	of	INDUSTRIAL DR	0	0	DAY	DRY	3	HNBD	2	20171003638
9	MISSOURI FLAT RD	3.05	100	SOUTH	of	INDUSTRIAL DR	0	0	DAY	DRY	2	HNBD	4	20170302688
9	MISSOURI FLAT RD	3.40	200	NORTH	of	PLEASANT VALLEY RD	0	0	DAY	DRY	2	HNBD	3	20170703252
9	MISSOURI FLAT RD	3.40	220	NORTH	of	PLEASANT VALLEY RD	0	0	DAY	DRY	5	HNBD	5	20170502945
9	MISSOURI FLAT RD	3.40	216	NORTH	of	PLEASANT VALLEY RD	0	0	DAY	DRY	2	HNBD	3	20170302686
9	MISSOURI FLAT RD	3.44	15	NORTH	of	PLEASANT VALLEY RD	0	0	DARK	DRY	2	DUI	3	20170302625

Site	Street	MP Reference	Reference Point	# Veh	Injury	Fatal	Acc Rate per MEV	Action
26	MISSOURI FLAT RD	1.56 - 1.63	VICINITY OF PLAZA DR	13	7	0	0.52	None Required
27	MISSOURI FLAT RD	1.77 - 2.01	SOUTH OF US 50	24	14	0	0.61	None Required
28	MISSOURI FLAT RD	2.28 - 2.35	VICINITY OF FORNI RD	10	8	0	0.26	None Required
29	MISSOURI FLAT RD	2.98 - 3.05	VICINITY OF INDUSTRIAL DR	7	1	0	0.28	None Required
30	MISSOURI FLAT RD	3.34 - 3.44	VICINITY OF PLEASANT VALLEY RD	6	0	0	0.29	None Required

Source: El Dorado County and SWITRS and PRISM Engineering

Freeway Analysis, All Scenarios.

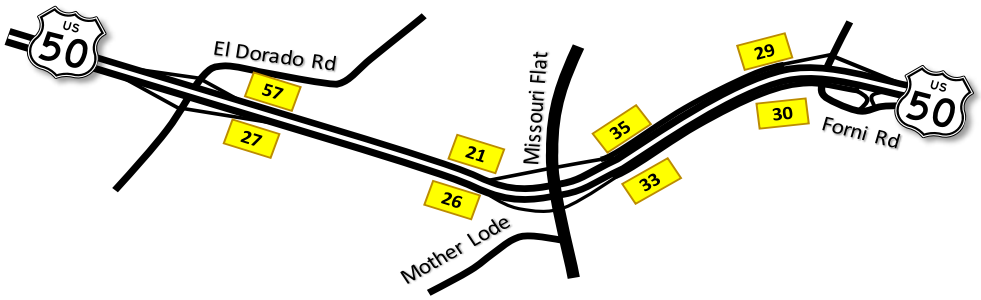
A freeway analysis was also conducted for the mainline US 50 freeway in the vicinity of the project site. Table 25 shows the level of service at each of these eight locations (identified graphically on map legend below), for each of the 12 scenarios examined in this report.

Table 25. Freeway Capacity Analysis Summary

		US 50 FREEWAY MAINLINE between:							
		El Dorado Rd and Missouri Flat Rd				Missouri Flat Rd and Forni Rd			
		MERGE		*DIVERGE*		*MERGE**		*DIVERGE**	
	ANALYSIS SCENARIO	EB	WB	EB	WB	EB	WB	EB	WB
	Node:	27	21	26	57	35	29	30	35
Year 2017	Existing 2017 AM Peak	LOS A, 3.3	LOS A, 3.4	LOS A, 0.7	LOS A, 0.8	LOS A, 0.8	LOS A, 2.6	LOS A, 0.3	LOS A, 6.8
	Existing Year 2017 AM Peak + Project	LOS A, 4.0	LOS A, 5.4	LOS A, 0.7	LOS A, 4.8	LOS A, 1.0	LOS A, 6.5	LOS A, 0.7	LOS A, 7.3
	Existing Year 2017 PM Peak	LOS C, 21.4	LOS A, 1.3	LOS A, 1.4	LOS A, 0.3	LOS B, 12.6	LOS A, 0.8	LOS A, 4.3	LOS A, 2.8
	Existing Year 2017 PM Peak + Project	LOS C, 22.6	LOS A, 1.3	LOS A, 1.5	LOS A, 0.9	LOS C, 16.8	LOS A, 1.1	LOS A, 4.5	LOS A, 2.5
Year 2027	Existing Year 2027 AM Peak	LOS A, 3.8	LOS B, 11.9	LOS A, 0.8	LOS A, 4.1	LOS A, 1.0	LOS A, 6.5	LOS A, 0.3	LOS A, 9.2
	Existing Year 2027 AM Peak + Project	LOS A, 4.4	LOS B, 14.3	LOS A, 0.8	LOS A, 6.2	LOS A, 1.2	LOS B, 12.2	LOS A, 0.8	LOS B, 11.7
	Existing Year 2027 PM Peak	LOS C, 22.7	LOS A, 1.6	LOS A, 1.5	LOS A, 0.4	LOS C, 15.9	LOS A, 1.0	LOS A, 4.4	LOS A, 3.1
	Existing Year 2027 PM Peak + Project	LOS C, 25.0	LOS A, 1.6	LOS A, 1.9	LOS A, 1.0	LOS C, 19.4	LOS A, 1.2	LOS A, 6.9	LOS A, 3.1
Year 2035	Existing Year 2035 AM Peak	LOS A, 4.2	LOS C, 18.7	LOS A, 0.9	LOS A, 6.7	LOS A, 1.1	LOS A, 9.7	LOS A, 0.3	LOS B, 11.1
	Existing Year 2035 AM Peak + Project	LOS A, 4.8	LOS C, 21.4	LOS A, 0.8	LOS A, 7.3	LOS A, 1.3	LOS C, 16.7	LOS A, 0.8	LOS B/C, 15.3
	Existing Year 2035 PM Peak	LOS C, 23.8	LOS A, 1.9	LOS A, 1.5	LOS A, 0.5	LOS C, 18.6	LOS A, 1.2	LOS A, 4.4	LOS A, 3.3
	Existing Year 2035 PM Peak + Project	LOS D, 26.9	LOS A, 1.9	LOS A, 2.2	LOS A, 1.1	LOS C, 21.4	LOS A, 1.3	LOS A, 8.9	LOS A, 3.5

Note: LOS calculated with HCM 2010 methodology

**Analyzed as worst case weave with 100% merge and 100% diverge, since specific O&D info for AUX lane was not available.*



VIII. Mitigations

This section of the report provides more detail pertaining to recommended improvements being called for in this report. Generally, when intersections are at LOS A-E conditions in the study area, this is an acceptable condition. When LOS F conditions exist at an intersection, and when the project adds more than 10 peak hour trips to one of these intersections with LOS F conditions, the impact is considered significant by the County's standards.

Measure E Considerations

Under Measure E the project is responsible to fully mitigate the impacts triggered under Existing Plus Project conditions[14] if the impacts are not mitigated by the County's CIP. Otherwise, the project merely has to pay its fair share TIM fee to mitigate impacts. Since the project falls under the category of being a residential project with five or more dwelling units, any capital improvement to be covered by the TIM fee payment must be in the County's 10 year CIP. The capital improvement projects in place that will mitigate impacts from the project are included in the County's 10 year CIP. Based on this report's analyses results using SimTraffic microsimulation calculations for Missouri Flat Road corridor sections where there are TWLTL medians, the overall level of service for Missouri Flat Road is LOS B or better conditions. The project does not trigger any need for immediate widening of Missouri Flat Road (to expand from two lanes to four lanes). Two new signal installations on Missouri Flat Road at Enterprise Drive and at Industrial Drive are either installed or currently under construction in the year 2020 as a part of the County's 10-year CIP. These are Project No: 73365 / 36105052 for Enterprise Drive, and Project No: 73366 / 36105053 for Industrial Drive.

Planned Roadway Improvements. The Cumulative analyses includes the planned roadway improvements anticipated in the County's CIP (such as the Diamond Springs Parkway, etc.), along with growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects within the study area. Missouri Flat Road widening from Pleasant Valley Road on the south to China Garden Road on the north is not planned within the County's 10 year CIP, but is within the County's 20 year CIP. However, the project does not trigger the need for Missouri Flat Road to be widened from two lanes to four lanes in order to achieve or maintain satisfactory levels of service on the corridor. The two signal installations already installed or underway enable Missouri Flat Road to maintain at satisfactory levels of service at LOS B conditions at the two new signalized intersections. The County's traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the CIP, and in the case of the project being a residential project with more than 5 dwelling units planned, only roadway mitigations included in the County's 10 year CIP are applicable for the TIM fee as a mitigation measure for the project. If the needed mitigation is not included in the 10 year CIP, then the project is obligated to mitigate the impact directly. No roadway widening improvements are planned for Pleasant Valley Road

[14] This was previously a correct statement, until a court ruling this summer declaring portions of Measure E to be unconstitutional. The court ruled that the previous language contained in Measure Y was still valid as detailed below:
"For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C] traffic on the County road system, the County shall do one of the following:
(1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element; or
(2) ensure the construction of the necessary road improvements are included in the County's 20-year CIP."

from Missouri Flat Road to Fowler Lane, but the level of service analysis results for roadway segments places the level of service at LOS D or better conditions for the Year 2018, 2028, and 2035 scenarios, with or without the project. No mitigations are recommended to widen Pleasant Valley Road from Missouri Flat Road to Fowler Lane based on the roadway segment analyses using SimTraffic microsimulation for all scenarios (microsimulation shows the maintaining of speeds in the general range of the posted speed limit of 35 mph, indicating minimal congestion).

In addition to County CIP improvements, Caltrans has several projects planned for their facilities in El Dorado County including some within the study area of this traffic study. Based on information in Caltrans' PROJECT MONITORING REPORT, September 2018, there is a transportation project (#24) slated for construction in the summer of 2020. The project is to widen shoulders on SR 49 between Patterson Drive to Missouri Flat Road (a distance of 2,800 feet). The purpose of the shoulder widening is to allow for improved bike and pedestrian access along SR 49, and to encourage active transportation in the area. Funding source for this project is Minor A funds, and the construction estimate is $900,000. Figure 22 shows the location of Caltrans El Dorado County projects including #24 on SR 49 between Patterson Drive and Missouri Flat Road.

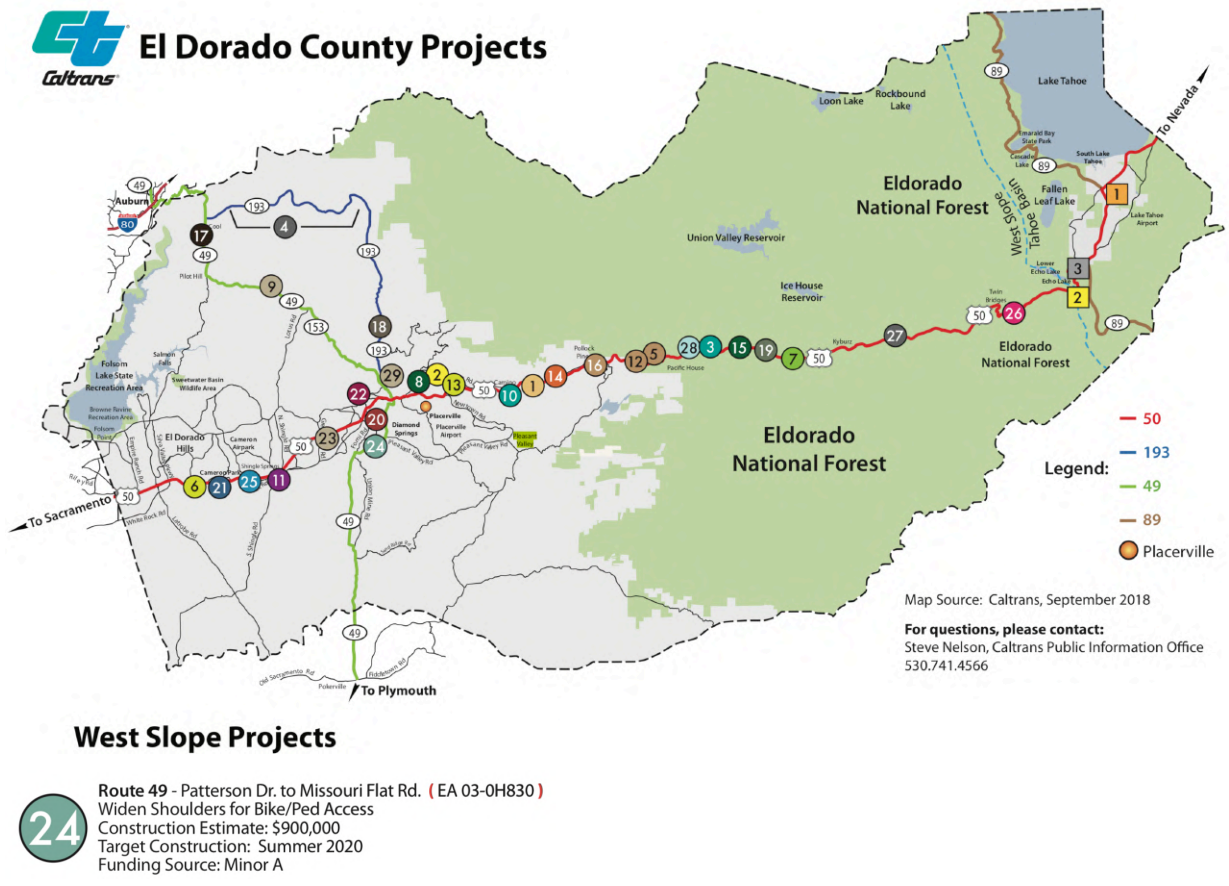


Figure 22. Caltrans, El Dorado County Transportation Projects

Source: Caltrans PROJECT MONITORING REPORT, September 2018, p. 29

The design of the modern roundabout built as a mitigation in part for the Dorado Oaks Project needs to be compatible with Caltrans' transportation plan, which has slated SR 49 (Pleasant Valley Road) between

Patterson Drive and Missouri Flat Road to be improved with bike and pedestrian facilities to make possible an "active transportation" plan in the study area. With the roundabout at Faith Lane being constructed with adequate pedestrian sidewalks and crosswalks, this active transportation plan can continue to expand contiguously along the Pleasant Valley Road corridor.

Intersection Needs Prioritization Process. The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County annually monitors intersections with potential need for improvement through the Intersection Needs Prioritization Process. The Intersection Needs Prioritization Process is then used to inform the annual update to the CIP, and potential intersection improvements can be added, by the Board of Supervisors, to the CIP as funding becomes available.

Payment of Traffic Impact Fees. Therefore, appropriate mitigation, as determined by the CDS, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation towards the improvements identified in this report, or construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others."

Year 2018 Existing Conditions

Table 8 for Year 2018 existing conditions at the beginning of this report shows all intersections at satisfactory levels of service for the existing condition.

Table 9 of this report shows the Missouri Flat Road link segment volumes and corresponding levels of service to be at LOS C or better conditions.

Traffic signals are warranted at four of the study intersections as shown in Table 12 for existing pm peak hour conditions. A signal warrant being met does not automatically require that a signal be installed, but is an indicator of needing further review based on safety, accident history, and level of service needs. These warranted intersections for existing pm peak hour traffic include:

- Missouri Flat Road at China Garden Road (warranted for CAMUTCD Peak Hour Warrant #4)
- Missouri Flat Road at Commerce way (warranted for CAMUTCD Peak Hour Warrant #4)
- Pleasant Valley Road at Forni Road (warranted for CAMUTCD Peak Hour Warrant #4)
- Pleasant Valley Road at SR 49 (south) (warranted for CAMUTCD Peak Hour Warrant #4)

Year 2018 Mitigation Recommendations Corresponding with this scenario

Since the levels of service are satisfactory at 4 out of the 4 intersections above where a signal warrant is met (side street LOS D or better), no signal installations are recommended for these intersections for the 2018 without project scenario.

Year 2018 Plus Project Mitigation Recommendations for this scenario

Table 8 shows LOS F conditions at one of the study intersections with project traffic, which is currently unsignalized and has one stop sign on the side street. This intersection is Pleasant Valley Road at Faith Lane. The mitigation may be installation of a traffic signal or roundabout:

- **Install Roundabout at** Pleasant Valley / Faith Lane (needed because of project)
    - **Alternative Option: Install Two Signals instead of Roundabout at** Pleasant Valley Road at Faith Lane realigned (to coincide with Silver Drive), and also at China Garden Road. These intersections would need to have coordinated signals to help keep traffic moving on Pleasant Valley Road (SR 49), and Pleasant Valley Road would need to be widened to three lanes to accommodate left turn pockets for the newly signalized intersections at Faith Lane (realigned to Silver Drive), and China Garden.

Roundabout Installation. The roundabout mitigation at Pleasant Valley Road at Faith Lane was not anticipated in the County's CIP, but a mitigation is needed to offset the project traffic impacts (causing existing Faith Lane LOS E conditions to go to LOS F conditions with the project). The project will need to mitigate this intersection with a modern roundabout to bring overall intersection traffic conditions to LOS D or better conditions in the Year 2018 plus Project scenario (an improvement over existing conditions), or as an alternative, install two signals as detailed below.

Two Traffic Signals Installation. It is also possible to mitigate this location with a set of two signals if Faith Lane is realigned to Silver Drive instead of its existing location. The three-way existing intersection of Pleasant Valley Road and Faith lane is almost immediately adjacent to the existing three-way intersection of Pleasant Valley Road and China Garden Road. Realigning Faith Lane to the Silver Drive location will provide 400 feet of separation between intersections, allowing for back to back left turn pocket storage (150' each)for each intersection. This is sufficient to prevent any left turn pocket overflow into Pleasant Valley Road through traffic, otherwise with the existing location of Faith Lane being only 110 feet away from China Garden Road, that situation would not allow sufficient left turn pocket lengths. It is not possible to install a single signal at China Garden Road (with Faith Lane realigned to meet it) because there would be no room for installing a left turn pocket on the WB approach without additional right of way takes and disruption of historical buildings. There is currently only room for a two lane cross section of pavement on Pleasant Valley Road to the east of China Garden Road, which is not an issue for the modern roundabout option. However, it would be an issue if the intersection was signalized. This is because there needs to be a left turn pocket turning in to China Garden Road from Pleasant Valley Road. This means that the through lane for eastbound traffic of Pleasant Valley Road will need to be shifted at least 12 feet to the south. There is some varying widths of paved shoulder which could be used, but a detailed civil engineering plan including sidewalks, curbs, and gutters would need to be completed to determine the feasibility of adding an additional lane on Pleasant Valley Road just east of China Garden Road, for the purpose of transitioning back in to a two lane road. Some telephone pole and utilities will also need to be moved to make such an improvement possible.

The County's CIP for Missouri Flat Road Widening (China Garden to Pleasant Valley Road/SR49) are scheduled for FY 28/29 – 37/38. County Long Range Planning annually monitors intersections with the potential need for improvements. The County's current Year 2018 CIP schedule and location is shown below.

Missouri Flat Road Widening - China Garden to Pleasant Valley Road/SR49

Financing Plan & Tentative Schedule



Project No: 72142 / 36105027 **Type: Roadway** **Supervisor District(s) 3**

All Figures in Thousands

Revenue by Funding Source	Prior FY*	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24-27/28	FY 28/29-37/38	Total
TIM - Zns 1-7	$0	$0	$0	$0	$0	$0	$0	$4,175	$4,175
Total	$0	$0	$0	$0	$0	$0	$0	$4,175	$4,175

All Figures in Thousands

Expenditures	Prior FY*	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24-27/28	FY 28/29-37/38	Total
Planning/Env - Consultant	$0	$0	$0	$0	$0	$0	$0	$181	$181
Planning/Env - Staff	$0	$0	$0	$0	$0	$0	$0	$107	$107
Design - Consultant	$0	$0	$0	$0	$0	$0	$0	$53	$53
Design - Staff	$0	$0	$0	$0	$0	$0	$0	$523	$523
Construction Mgmt - Consultant	$0	$0	$0	$0	$0	$0	$0	$21	$21
Construction Mgmt - Staff	$0	$0	$0	$0	$0	$0	$0	$411	$411
Direct Construction Costs	$0	$0	$0	$0	$0	$0	$0	$2,879	$2,879
Total	$0	$0	$0	$0	$0	$0	$0	$4,175	$4,175

Project Schedule	Prior FY*	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24-27/28	FY 28/29-37/38	
Planning/Environmental									
Design									
Right Of Way									
Construction									
Environmental Monitoring									

*Prior FY includes actual revenue and expenditures through 06/30/17, plus amounts estimated through 6/30/18.

Source: County CIP 2018, Page 104-105

Right of Way Acquisitions. It is important to note that this intersection cannot be satisfactorily mitigated without some impact to existing development on Pleasant Valley Road. Additional right of way, whether an extra wide intersection at China Garden for a roundabout, or an extra wide and much longer street segment on Pleasant Valley Road from west of Silver Drive to east of China Garden Road to accommodate signals and sidewalks, and long left turn pockets. Significant right of way acquisition over numerous parcels on the south side of Pleasant Valley Road is necessary to install signals. The signal option is not as feasible as roundabout construction, and is not recommended as the first alternative.

Figure 23 shows the proposed modern roundabout option which would operate at LOS C for Year 2035 plus Project in the pm peak hour, which is satisfactory for the Pleasant Valley Road corridor. In the future after the Diamond Springs Parkway is constructed, traffic volumes on Pleasant Valley Road will shift

partially to that new corridor, and volumes on Pleasant Valley Road between Fowler and Missouri Flat Road will decrease about 10%. This will result in LOS C conditions for this roundabout as shown in Figure 23. Through some right-of-way acquisition, it is possible to combine Faith Lane and China Garden Road into a modern roundabout by realigning Faith Lane to meet with China Garden Road as shown.

Recommended Mitigation. It is recommended that the modern roundabout as shown in Figure 23 be adopted as the mitigation of choice, since it will have the least impact overall to existing historical developments along Pleasant Valley Road, and Pleasant Valley Road can easily remain a two-lane cross section east of China Garden Road as well as west of Faith Lane all the way to transitioning with Missouri Flat Road. Roundabouts are known for "wide nodes" and "narrow roads" as a benefit to the surrounding road system. The right turn pocket for the eastbound approach acts as a roundabout bypass lane, and is helpful to the overall level of service, taking the project inbound volume out of the impact. It is necessary to achieve the LOS C condition, otherwise LOS D conditions would exist. The roundabout intersection will operate at LOS C conditions even beyond the Year 2035 including the full project traffic. It will also help to calm traffic and enhance the Pleasant Valley corridor in this area. There is a historical building on the south side of the China Garden Road intersection which could be moved to another location on the same parcel there, if it is determined that it has historical significance and must remain.

Roundabout Analysis Methodology. Current transportation plans indicate a historical nature of the Pleasant Valley Road corridor in the vicinity of the project. Pleasant Valley Road near Faith Lane is currently two lanes wide, and because of historical considerations with existing buildings to the east of Faith Lane, this road will never be more than two lanes without directly impacting the ability to have sidewalks or bike lanes. It is better to keep it at two lanes so that an active transportation plan can take place in the future including bikes and pedestrian walkways or sidewalks. For this reason, the roundabout improvement alternative provides the best solution that avoids the need to widen Pleasant Valley Road to the east of Faith Lane. For the purposes of this analysis, PRISM Engineering explored several ways to analyze traffic flows through the proposed roundabout solution, and after some deliberation determined that the most appropriate software for calculation of level of service for the single lane roundabout proposed at Faith Lane is the Synchro and SimTraffic software and analysis method[15]. This is because the roundabout will of necessity be small (single lane inside the circle), and many software programs over-estimate the capacity of these smaller roundabout, SIDRA being at the top of the list, especially if inside turning conflicts are low, which in this case, they are.

[15] See Appendix A.4 Roundabout Analysis Considerations and Factors

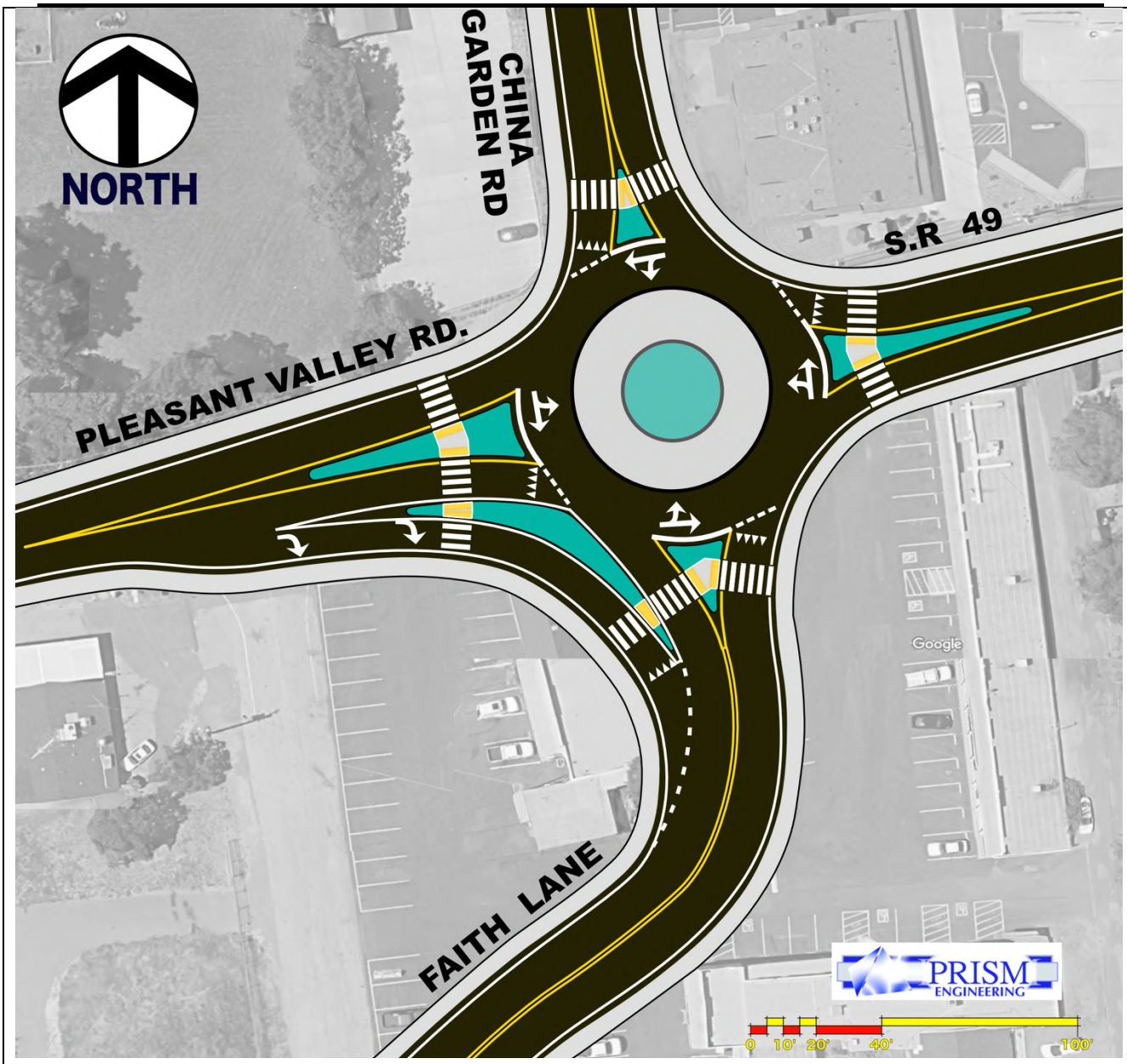


Figure 23. Roundabout Concept and Mitigation, LOS C

Source: PRISM Engineering

Roundabout size limitations. There is not sufficient room for the diameter of the roundabout to expand to allow for two lanes per approach without direct impact to historical buildings (Pleasant Valley Road would need to be four lanes wide to accomplish this). Therefore, the size of this roundabout would be limited to a single internal circulatory lane, and the appropriate analysis tool for this is Synchro/SimTraffic, based on HCM 2010 methods using relevant US empirical data, and offering a conservative result in the level of service calculation. Other programs far over-estimated entry capacity for a single lane roundabout (such as Sidra software being 80% higher compared to Synchro software for the volume and lanes in the Pleasant Valley / Faith Lane intersection scenario). The traffic volumes at Faith Lane and Pleasant Valley Road / SR 49 are currently 980 vph in the EB direction and 589 in the WB direction during the Year 2018

pm peak hour, and only 28 cars going to or from Faith Lane (just 2%). In the Year 2035 these volumes will drop about 10% to 885 EB and 530 WB, based on the traffic shift that will take place from the Pleasant Valley Road / Missouri Flat Road pathway, to the SR 49 / Diamond Springs Parkway pathway once the Diamond Springs Parkway is constructed. The existing Year 2018 volumes to and from Faith Lane are only 28 vph in the pm peak hour, and this turn movement represents what is called the "Conflicting Flow" in a roundabout at Faith Lane. It directly affects the capacity calculation for roundabouts. Since this volume is very low, most other software programs would over-estimate the capacity of the roundabout based upon their specific methods (see Appendix A.4 for more information and a comparative chart). For this reason, Synchro/SimTraffic was used in this analysis, to be conservative, and not over-estimate the capacity of the roundabout. Even with using the conservative Synchro HCM 2010 method, the level of service would be LOS C, indicating that this improvement would be successful at moving traffic long into the future.

Analysis Validation. PRISM Engineering validated by analysis and research the decision to use the most appropriate and conservative method for calculating roundabout level of service at the Faith Lane location. This was ultimately done by using Synchro and SimTraffic, both of which are based upon the HCM 2010 methodology contained in Chapters 21 and 33, and implemented in Synchro 9 and beyond. These HCM 2010 chapters inform that the method is robust and well developed, based on empirical data gathered from the US roundabout installations, and not based on traffic conditions in other countries such as the UK or Australia. The Synchro and SimTraffic tools are shown by detailed research to be much more conservative for analyzing smaller roundabouts, in that these yield lower roundabout capacities for small diameter, single lane roundabouts with low turn conflicts. This is exactly the kind of roundabout that will be installed on Pleasant Valley Road at Faith Lane, a single lane entry, single lane circulation inside circle, very low (2%) turning movement conflict, and a small diameter. Our calculations level of service came out to be LOS C conditions, but when compared to other software programs like SIDRA (which calculate capacities based on empirical data from other countries and is 80% higher than Synchro in overestimating capacity), or RODEL being based on UK traffic flows and specific geometry assumptions… Rodel tends to be 15-20% higher in capacity primarily because of UK driver familiarity with numerous roundabouts. SIDRA being based on conditions in Australia, has an "environment factor" for use in the US to change operation from standard defaults, but this method is guesswork. Synchro 9 handles even multi lane roundabouts which previous versions could not. SimTraffic is a simulation method based on Synchro inputs, and can also effectively calculate level of service for roundabouts. Some calibration is needed for all methods used, and PRISM Engineering utilized location specific data to enhance results for Synchro and SimTraffic. These included extensively measuring Saturation Flow Rates in the study area to determine how "aggressive" drivers are in the area based on vehicle headways.

Year 2027 Conditions Mitigation Recommendations for this scenario

Table 14 shows LOS F conditions for the Year 2027 conditions at only one of the study intersections without the project. This intersection is Pleasant Valley Road at SR 49 S (Int. #17), which has LOS F conditions without the project. This locations needs mitigation such as installation of a traffic signal:

- **Install Signal** at Pleasant Valley Road and SR 49 S (needed without project)

The arterial roadway segment analyses using microsimulation for this scenario puts the level of service for all analysis roadways on Missouri Flat Road and Pleasant Valley Road at LOS D or better conditions, requiring no mitigation with or without the project. This is assuming that the County's CIP improvements for signalization are in place, the new roundabout at Pleasant Valley Road and Faith Lane are in place, and

the Diamond Springs Parkway is in place which will mitigate future traffic (the volumes on Pleasant Valley Road will also slightly reduce in the future because of a rerouting of some regional traffic to use the Diamond Springs Parkway instead). The project has an impact at these intersections (based on the assumption of side-street stop-control), and the mitigation is signalization. The project would satisfy its obligation through payment of TIM fees

Year 2027 Plus Project Conditions Mitigation Recommendations for this scenario

When the project traffic is added in, two intersections are adversely impacted, and would require mitigation for this scenario. The arterial roadway segment analyses using microsimulation for this scenario puts the level of service for all analysis roadways on Missouri Flat Road and Pleasant Valley Road at LOS D or better conditions, requiring no mitigation with or without the project. This is assuming that the County's CIP improvements for signalization are in place, and the Diamond Springs Parkway is in place which will mitigate future traffic (the volumes on Pleasant Valley Road will also slightly reduce in the future because of a rerouting of some regional traffic to use the Diamond Springs Parkway instead).

- **Install Roundabout at** Pleasant Valley / Faith Lane (needed because of project)
    - **Alternative Option: Install Two Signals instead of Roundabout at** Pleasant Valley Road at Faith Lane and also at China Garden Road (needed because of project). These intersections would need to have coordinated signals to help keep traffic moving on Pleasant Valley Road (SR 49), and Pleasant Valley Road would need to be widened to three lanes to accommodate left turn pockets for the newly signalized intersections at Faith and China Garden.
- **Install Signal** at Pleasant Valley Road and SR 49 S (needed without project)

Year 2035 Conditions Mitigation Recommendations for this scenario

Table 19 shows LOS F conditions at only one of the study intersections, similar to the Year 2027 scenario. These intersection needs mitigation such as installation of a traffic signal:

- **Install Signal at** Pleasant Valley Road and SR 49 S (needed without project)

Year 2035 Plus Project Conditions Mitigation Recommendations for this scenario

Table 19 shows LOS F conditions at two of the study intersections when the project traffic is added in, the same locations identified in the Year 2027 scenario. These include the following intersections which need mitigation such as installation of a traffic signal or roundabout:

- **1) Install Roundabout at** Pleasant Valley / Faith Lane (needed because of project)
    - **Alternative Option: Install Two Signals instead of Roundabout at** Pleasant Valley Road at Faith Lane and also at China Garden Road (needed because of project). These intersections would need to have coordinated signals to help keep traffic moving on Pleasant Valley Road (SR 49), and Pleasant Valley Road would need to be widened to three lanes to accommodate left turn pockets for the newly signalized intersections at Faith and China Garden.
- **2) Install Signal at** Pleasant Valley Road and SR 49 S (needed without project)

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APPENDIX

- Saturation Flow Rate Survey Summary Table A.1
- Section A.2. Microsimulation Model Calibration: Synchro/SimTraffic Software
- Section A.3. Year 2018 Traffic Counts and Update Methodology
- Section A.4. Roundabout Analysis Considerations and Factors
- Section A.5. Missouri Flat Road Corridor Arterial Segment Analysis
- Section A.6. Planning Level Segment Analysis
- Section A.7. 24-Hour Traffic Counts
- Section A.8. Travel Demand Model Outputs from El Dorado County for Year 2010 and 2035 AM and PM Peaks.
- Section A.9. Synchro and SimTraffic Microsimulation HCM 2010 Capacity Analyses Output Sheets (downloaded separately to County DOT Staff from DROPBOX location, and contained in separate and labeled PDF files for each scenario)
- Section A.10 Synchro and SimTraffic Instructions
- Section A.11 Signal Warrant Analysis Worksheets

Table A.1. Saturation Flow Rate Studies, Missouri Flat Road

No.	CLOCK TIME	LOCATION of Sample	TIME (secs)	# of CARS	AVERAGE HEADWAY (secs)	Saturation Flow Rate (vph)	SFR for LEFT TURN Moves	SFR for THRU Moves
1	7:30-7:45am	Missouri Flat at US50 WB Ramp SBT	13.7	6	2.3	1577		1577
2	7:30-7:45am	Missouri Flat at Mother Lode SBT	11.3	6	1.9	1912		1912
3	7:30-7:45am	Missouri Flat at Mother Lode NBT	10.9	6	1.8	1982		1982
4	7:30-7:45am	Missouri Flat at Mother Lode NBT	13.4	6	2.2	1612		1612
5	7:30-7:45am	Missouri Flat at Mother Lode **EBL left turn**	**13.3**	**6**	2.2	1624	**1624**	
6	7:30-7:45am	Missouri Flat at US50 EB Ramp SBT	8.9	4	2.2	1618		1618
7	7:30-7:45am	Missouri Flat at US50 WB Off **WBL left turn**	**10.8**	**5**	2.2	1667	**1667**	
8	7:45-8:00am	Missouri Flat at Mother Lode NBT	11	6	1.8	1964		1964
9	7:45-8:00am	Missouri Flat at Mother Lode NBT	20.2	14	1.4	2495		2495
10	7:45-8:00am	Missouri Flat at Forni SBT	14.6	6	2.4	1479		1479
11	7:45-8:00am	Missouri Flat at Forni **SBL left turn**	**10.9**	**5**	2.2	1651	**1651**	
12	7:45-8:00am	Missouri Flat at Forni NBT	12.2	5	2.4	1475		1475
13	7:45-8:00am	Missouri Flat at Forni NBT	22	9	2.4	1473		1473
14	7:30-7:45am	Missouri Flat at US50 EB Ramp NBT	7.4	3	2.5	1459		1459
15	7:30-7:45am	Missouri Flat at US50 EB Ramp NBT	11.2	7	1.6	2250		2250
16	7:30-7:45am	Missouri Flat at Mother Lode SBT	19.8	11	1.8	2000		2000
17	5:00-5:15pm	Missouri Flat at US50 EB Ramp NBT	22.1	12	1.8	1955		1955
18	5:00-5:15pm	Missouri Flat at US50 EB Ramp SBT	11.1	5	2.2	1622		1622
19	5:00-5:15pm	Missouri Flat at US50 EB Ramp SBT	18.5	9	2.1	1751		1751
20	5:00-5:15pm	Missouri Flat at Mother Lode SBT	8.1	5	1.6	2222		2222
21	5:00-5:15pm	Missouri Flat at US50 EB Ramp SBT	10.7	6	1.8	2019		2019
22	5:00-5:15pm	Missouri Flat at US50 WB Ramp SBT	10.7	6	1.8	2019		2019
23	5:00-5:15pm	Missouri Flat at US50 WB Off **WBL left turn**	12.5	7	1.8	2016	**2016**	
24	5:00-5:15pm	Missouri Flat at US50 EB Off **EBR right turn**	21.1	9	2.3	1536	**1536**	
25	5:00-5:15pm	Missouri Flat at US50 WB Off **WBL left turn**	7.2	4	1.8	2000	**2000**	
26	5:00-5:15pm	Missouri Flat at US 50 EB Off **EBL left turn**	9.7	4	2.4	1485	**1485**	
27	5:00-5:15pm	Missouri Flat at US50 EB Off **EBR right turn**	5.8	3	1.9	1862	**1862**	
28	5:00-5:15pm	Missouri Flat at US50 EB Ramp SBT	12.7	6	2.1	1701		1701
29	5:00-5:15pm	Missouri Flat at US50 EB Ramp SBT	18.7	9	2.1	1733		1733
		average headway based on Saturation Flow samplings			**2.0**	**1798**	**1730**	**1825** **
						AVG	LEFT	THRU
					AM	1765	1647	1792 ***
					PM	1840	1780	1878 ****

*Total time of sample in seconds starting with 4th vehicle at stop line

SimTraffic uses 2.2 second headways for higher speed roads (50 mph+) and 1.8 secs for 20 mph, which is even more conservative than the 2.0 average PRISM used at the ramp intersections. This means that the SimTraffic is going to be showing a more worst case situation than actual, which means the analysis is conservative if SimTraffic DEFAULTS are used, which they were.

** AM and PM averaged together
*** AM Saturation Flow values
**** PM Saturation Flow values

Source: PRISM Engineering

Data collected by PRISM Engineering in the field using video cameras, stop watches, and personal observations by Traffic Engineer during entire study.

Section A.2. Microsimulation Model Calibration: Synchro/SimTraffic Software

PRISM Engineering utilized both Synchro and SimTraffic models in the development of analysis to determine macro level Level of Service and corresponding delay times. The SimTraffic model used all inputs from the Synchro model to animate traffic in a simulation that closely represents the real-world conditions. PRISM Engineering took video of all traffic flows at major intersections along Missouri Flat Road to document and have for a reference, the actual flows of traffic during am and pm peak hour time periods. This visual video reference of peak hour traffic, along with showing the number of cars in the queues, etc., provided a visual validation of animated traffic flows that were taking place in the SimTraffic model for peak hour traffic counts. Where the model needed slight adjustments due to a non-match in verifying animation, we adjusted speeds of the road, made any needed corrections to signal timing to more closely represent timing and signal cycle lengths in the field, as well as utilizing the saturation flow rate data in **Table A1** to represent what was included in the model for accuracy in acceleration and other traffic dynamics (the higher the saturation flow rate, the higher the aggressive factor in SimTraffic, and the headways are affected with this data increasing capacity, etc.).

Caltrans Guide for the Preparation of Traffic Impact Studies states on p.5 that the HCM method (used in Synchro) is not capable or sensitive to the dynamics of closely spaced intersections (and this is why a microsimulation model like SimTraffic is more appropriate):

“The procedures in the Highway Capacity Manual "do not explicitly address operations of closely spaced signalized intersections. Under such conditions, several unique characteristics must be considered, including spill-back potential from the downstream intersection to the upstream intersection, effects of downstream queues on upstream saturation flow rate, and unusual platoon dispersion or compression between intersections. An example of such closely spaced operations is signalized ramp terminals at urban interchanges. Queue interactions between closely spaced intersections may seriously distort the procedures in" the HCM.

For these reasons, PRISM Engineering used SimTraffic as the microsimulation analysis tool calibrated with specific saturation flow rates, video verification of traffic flows compared to animation, and adjustments of speeds for real world traffic flows for all five intersections at the Missouri Flat / US 50 interchange area where all intersections are closely spaced from 100 feet to 400 feet apart. We used SimTraffic to generate delay reports as required by El Dorado County and correlated this delay to level of service in the report tables. In our calibration we matched real-world conditions. We used multiple runs (20), averaged together the middle 10 runs to reduce the variability in results. We used a 10 minute seed time and 60 minute record time for analysis purposes.

Section A.3. Traffic Counts and Update Methodology

PRISM Engineering originally conducted new two-hour am and pm peak hour traffic counts on Wednesday October 26, 2016 and also on Thursday December 8, 2016. We used HD video camera technology mounted at high locations on poles or signs to capture all turning movements at major intersections. These videos were counted later in the office on a computer, watching each video several times to count large volume approaches separately for higher accuracy, since some intersections were of extremely high volumes and difficult to fully count in the field, as well as be able to see all turning movements at street level). We counted smaller volume intersections in the field using electronic traffic counting software (TurnCount) on computer tablets, then converted into Microsoft Excel spreadsheets for each count, for both the am and pm peak hour traffic counts taken. Traffic counts were taken at all 16 existing intersections in the study, and this turning movement data was entered into the Synchro model software for intersection analysis, for each of the intersections, for both the am peak hour and pm peak hour time periods. PRISM Engineering balanced all volumes using the Synchro balancing feature, between intersections where intersections were closely spaced, and all volumes should match, and where there were no significant driveways or side streets where traffic could enter or leave the specific corridors like Missouri Flat Road, or SR 49. Engineering judgment was used to ensure the higher volumes of adjacent intersections were used in making the balance of traffic volumes.

For road segments, PRISM Engineering originally utilized the County's data from their 2015 Annual Traffic Count Summary document, as well as specific hourly totals from the same source along the Missouri Flat corridor which could be easily correlated with the peak hour intersection counts PRISM Engineering had taken in late 2016. Segment volumes from County counts between intersections could be compared to PRISM Engineering intersection count approach volumes or exit volumes to see if all traffic counts were within reasonable magnitudes of each other. If any anomalies arose, other adjacent counts were examined to determine where an adjustment might be needed so that traffic volumes between intersections were properly balanced according to engineering judgment.

On February 21, 2018, Traffic Counts Plus (whom PRISM Engineering hired) used roadway hose counters to gather new hourly directional roadway data for a 24 hour period on a Wednesday at 10 key locations so that any increases in traffic volumes observed on study roadways could be compared to the original existing 2016/2017 counts, and PRISM Engineering would make any needed adjustments upward to reflect growth, if any, updating all counts to current conditions. The methodology used was to take the corresponding hourly peak hour directional volumes (such as 5:00 to 6:00 pm) and compare these to the approach or departing totals from the adjacent intersection counts, and after noting any differences, update the intersection counts to reflect increases in traffic volume. Our method was to only increase the volumes of intersection counts and not decrease, to be conservative. The following new Feb 21, 2018 roadway segment 24 hour counts were taken for this purpose:

1. Forni Road north of SR 49,
2. Missouri Flat Road north of Plaza Drive,
3. Missouri Flat Road north of US 50 WB Ramps,
4. Missouri Flat Road north of Forni Road,
5. Missouri Flat Road south of Forni Road,
6. Missouri Flat Road south of China Garden Road,
7. Missouri Flat Road north of SR 49 / Pleasant Valley Road,
8. SR 49 / Pleasant Valley Road west of Faith Lane,
9. SR 49 / Pleasant Valley Road east of China Garden Road,
10. SR 49 / Pleasant Valley Road west of Missouri Flat Road.

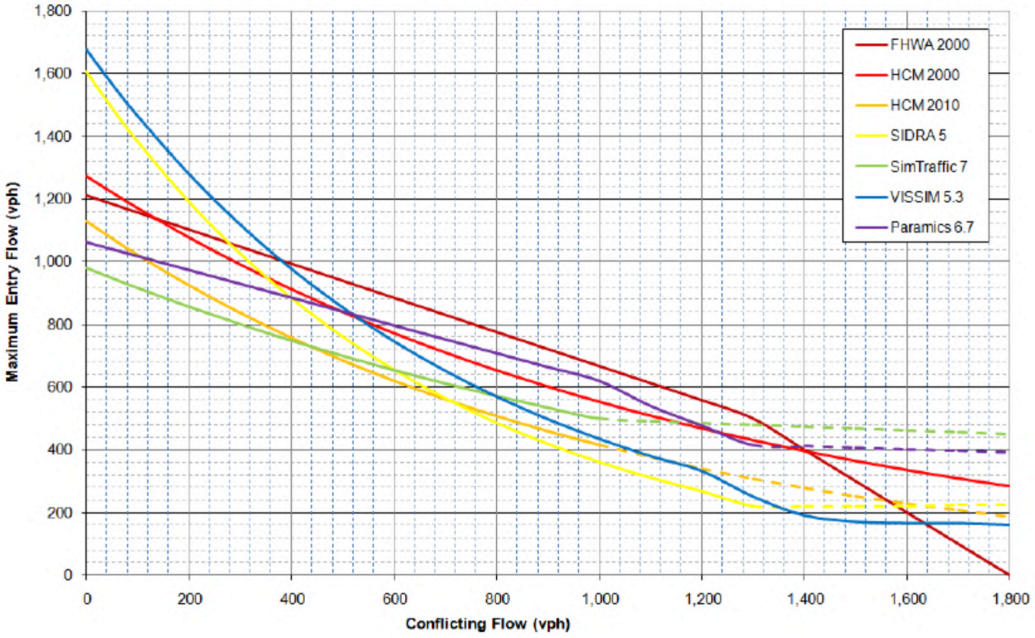
This traffic data collected by Traffic Counts Plus is included here for each of the 10 locations (follows next page). The counts report the directional volumes on the road segment in 15 minute consecutive intervals for a 24 time period. The count summary shows hourly totals as well, and identifies the actual am and pm peak hours. It shows the two way total, for both the am hours and the pm hours. PRISM Engineering used this data to fully update all original am and pm peak hour turning movement counts for the 16 study intersections, combined with the standard balancing technique in Synchro, and using engineering judgment to ensure a conservative adjustment is made (no decreasing of volumes, but increasing where needed to match new counts).

Section A.4. Roundabout Analysis Considerations and Factors

Analysis of roundabouts using the HCM 2010 methodology contained in Chapters 21 and 33, and implemented in Synchro 9 and beyond, was used in this study. SIDRA was considered, and outputs compared to Synchro and SimTraffic, but found to be inadequate by comparison for this particular roundabout problem. The proposed roundabout at Pleasant Valley Road and Faith Lane is small, with single lane entries, and has a very small conflicting flow. This is precisely the type of roundabout that calculations with SIDRA are in the outlier category. We carefully considered the outputs and limitations and decided to not use SIDRA because of its limitations in projecting extremely high capacities for entry traffic flows into single lane roundabouts when the inside circulating/conflicting volume is low. It is very low at this location. In fact, the capacity of the SIDRA software came out to be nearly DOUBLE the value in the Synchro/SimTraffic model (1600 vph maximum entry capacity versus 980 vph in the Synchro/SimTraffic model). This is not acceptable, or believable. In the case of the Faith Lane single lane roundabout, most all of the volume in the roundabout is pass through, and does not make a turning movement, which means that the "Conflicting Flow" in the roundabout is very small (actually only 28 vph today) . Since the proposed roundabout in this study is a single lane roundabout, with a single circulation lane internal,

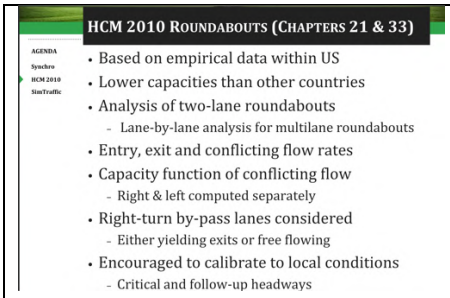
SIDRA was not used because of this significant limitation. Instead, the Synchro and SimTraffic software combo was used, because Synchro 9, based on the HCM 2010 methods and empirical US data for roundabouts, takes into consideration more relevant and appropriate roundabout parameters. Also, the SimTraffic model is a more advanced tool, a microsimulation model that can be calibrated, and simulating traffic flows on screen while calculating any delays by virtue of direct conflicts of vehicles in the roundabout or approaches (level of service can be directly determined from delays). These HCM 2010 chapters 21 and 33 inform that the method is robust and is based on empirical Data within the US and not based on traffic conditions in other countries. The Synchro 9 and companion SimTraffic tools, based on the HCM 2010 methods, are more conservative, in that they yield lower roundabout capacities than in other software based on other countries (such as RODEL being based on UK traffic flows and specific geometry which tend to be 15-20% higher in capacity because of driver familiarity there, and SIDRA based on conditions in Australia but has an "environment factor" for use in the US to change operation from standard defaults, but is not based on US data directly). Synchro 9 can handle even multi lane roundabouts which previous versions could not. SimTraffic is a simulation method based on Synchro inputs, and can also effectively calculate level of service for roundabouts. Some calibration is needed for all methods used, and PRISM Engineering utilized location specific data to enhance results for Synchro and SimTraffic and these included measuring Saturation Flow Rate to determine how "aggressive" drivers are in the area based on vehicle headways.

Studies show that for the situation on Pleasant Valley Road, a road that is two lanes and because of historical considerations with existing buildings will never be more than two lanes, the roundabout at Faith Lane will need to be a single lane roundabout, with a single lane approach for all approaches. There is not sufficient room for the diameter of the roundabout to expand to two lanes without impact to historical buildings. The Synchro 9 and SimTraffic microsimulation model are the most appropriate tool to calculate the best capacity and level of service calculation for this location because of its conservative calculation for entry capacity as shown in the following "Figure 7" from software comparison research, where several software programs are compared for how they treat "Maximum Entry Flow" capacity for a single lane roundabout. It can be seen that the SimTraffic model (green line) had the lowest and most conservative result for single lane roundabouts where the internal circulating volume is very low. This condition matches closely the condition in the field at Faith Lane and Pleasant Valley Road / SR 49, where the primary existing volumes are through lane volumes on Pleasant Valley Road (Year 2018 983 EB+589WB=1572 and 28 vph turning, or only 2%, so that 98% of traffic going through the roundabout does not circulate. This places the "Conflicting Flow" at the left side of Figure 7 chart where the SimTraffic Maximum Entry Flow is around 980 vph). In the future Year 2035 condition, this EB entry volume is reduced based on reassignment of traffic with the bypass, and the EB volume is projected to be only 885 vph).

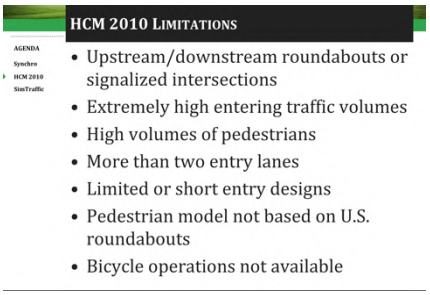


Source: Stanek, Comparing Roundabout Capacity Methods, or How the Selection of Analysis Method Can Affect the Design (Conference: Transportation Research Board Annual Meeting, At Washington, DC)

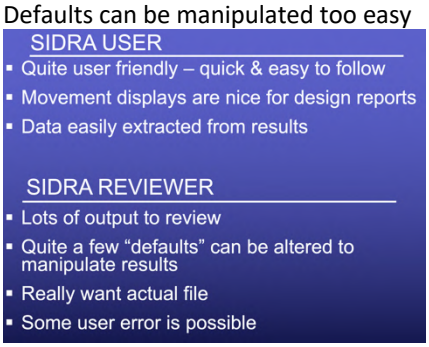
FIGURE 7. Single-lane roundabout capacity



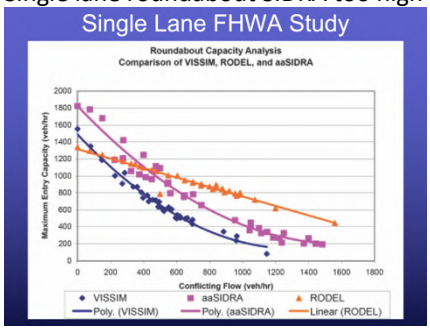
can't have



Defaults can be manipulated too easy



Single lane roundabout SIDRA too high



Section A.5 Missouri Flat Road Corridor Arterial Segment Analyses

Missouri Flat Road between Pleasant Valley Road on the south and Plaza Drive on the north, takes on *many different forms of cross-section and traffic control* such as large intersections with full signal control, small intersections with a side street stop control, two-way left turn lane medians, left turn pockets unsignalized at intersections, or no median at all (just double yellow centerline striping). Transitions between these type of cross sections are also complex, making it difficult to analyze Missouri Flat Road in a consistent and appropriate way, using an appropriate analysis tool. Most analysis tools such as HCS 7 based on the HCM 2010 methods and procedures, do not have a capability for instance, to analyze a two lane arterial if it has a TWLTL median. It can only analyze an arterial with four or more lanes. This is probably because of the hidden complexity of the two lane arterial. It is complex because cars cannot pass each other, and delays are governed by the slowest moving car or truck. Certain aggressions in driver behavior may be present such as tail-gating, etc., and gaps in traffic may be rare, making it very difficult for side street traffic to safely enter the main arterial.

HCS is software that generally analyzes only a single transportation element, such as an intersection or a roadway segment, or a freeway ramp. It cannot analyze the bigger picture transportation problem, and it certainly can't account for changes or transitions in the system such as when a four lane road transitions into a two lane road, and the traffic dynamics that go along with those kinds of changes. It can't account for severe delays that may occur at a nearby adjacent intersection, where traffic is blocked and this traffic blockage extends back into another intersection but the HCS software calculates a satisfactory level of service based on the local volumes and turning movements only.

This limitation can yield false results in some cases, and is the main reason that in this report PRISM Engineering used the HCM 2010 compatible **Synchro** and **SimTraffic** models to analyze traffic, especially on Missouri Flat Road. Even though Synchro, being a macro model with lots of detail for road geometry and traffic profiles and signal timing / phasing control,

its companion software SimTraffic reads and utilizes all of this same information and takes the analysis much further. SimTraffic can actually place each car in its system individually, and animate the combined traffic in a realistic model that actually shows traffic moving at speed limits if possible, and slowing when there are real-world type physical limitations in capacity in getting traffic through an intersection or road segment. Cars moving are bound by physical limitations, if they can't proceed (cars ahead, or light is red, etc), the visual animations on the screen show this, and the transportation engineer can view these kinds of traffic flow problems and make appropriate mitigation adjustments to road sizing, intersection sizing, signal timings, traffic control choices, or even speed limits, etc. Interactively, the transportation system can be adjusted until a satisfactory capacity and throughput of traffic flows is achieved.

PRISM Engineering explored several methods to calculate the appropriate level of service for roadway segments (not intersections). These included HCM 2010 compatible methods built in to the SimTraffic software, the HCS 7 software, and the assumptions of the El Dorado County "Planning Level" roadway segment analysis method. These are briefly discussed in the following paragraphs:

1. The SimTraffic microsimulation model (incorporates all roadway cross-section details including Two-way Left Turn Lane (TWLTL) medians, posted speeds, lane capacities, all details of lane geometry and vehicle types in microsimulation, etc, which includes the effects on delay to a roadway segment from adjacent intersections, signal timings, etc. It looks at the bigger picture of a system of traffic intersections and segments) the sophisticated SimTraffic HCM 2010 microsimulation method which takes into consideration all adjacent intersections, signal timings, delays, turning movements, and medians which may be a two-way left turn lane (TWLTL) or a left turn pocket, or even a stop sign or signal. It also considers the specific speed limits and saturation flow rates determined from field data measurements.



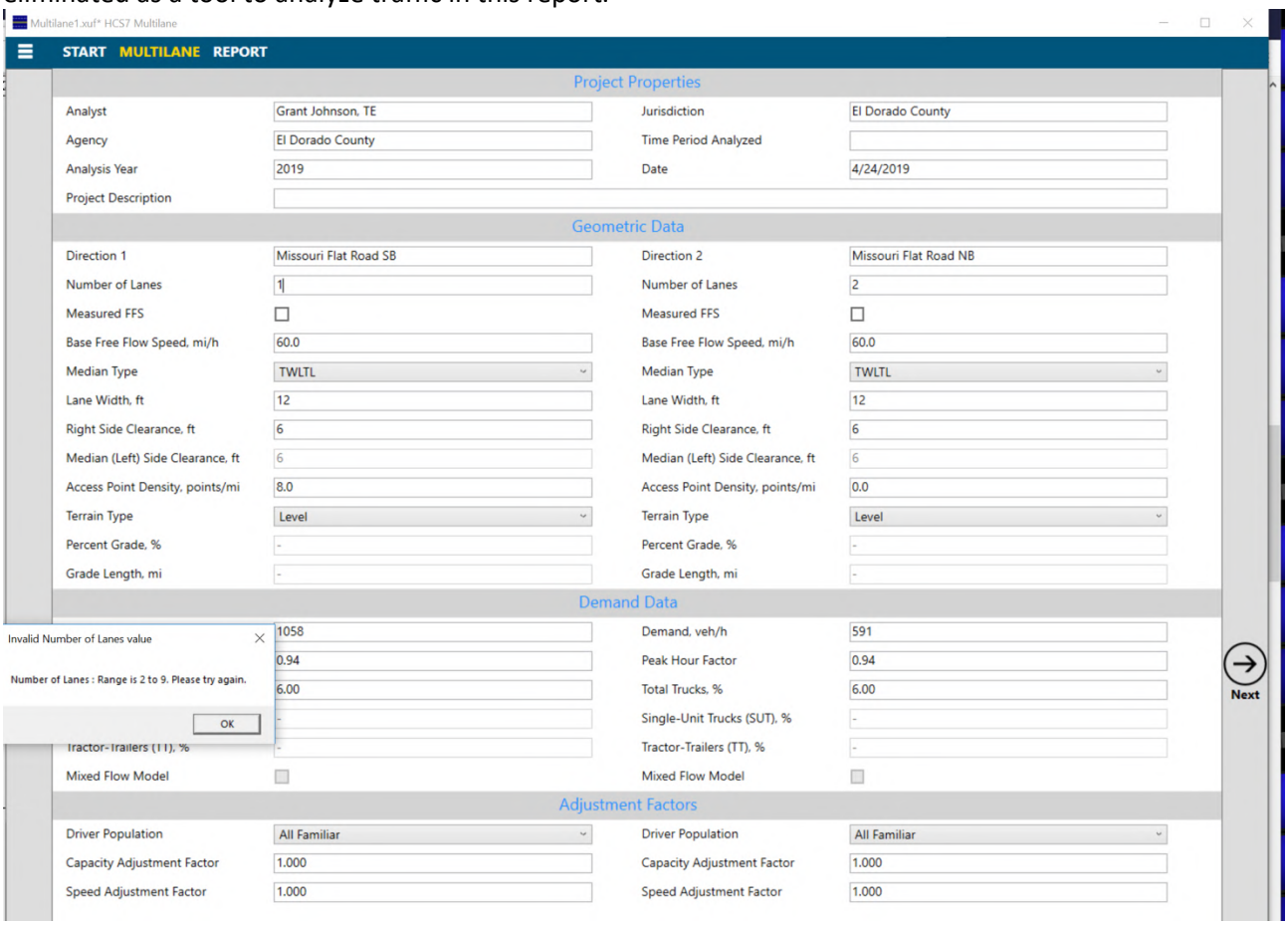
***BEFORE CONDITION*:**

The picture above is a "screen shot" of the computerized SimTraffic microsimulation model which was calibrated to the existing PM peak hour traffic, and verified with video. The microsimulation shows vehicles queued up on the NB approach of the Redwood Highway Frontage Road at SR 131, as well as the WB approach on Tiburon Road, and also the US 101 NB Off-ramp and On-loop.

screen shot from SimTraffic software, in an analysis by PRISM Engineering, showing vehicle spacing and animation of traffic

2. The **HCS 7** two-lane and multilane highways modules (cannot handle TWLTL for two lane highways which is critical to accurately analyze much of Missouri Flat Road; It is not a microsimulation model and cannot take into account a longer corridor of potential delays at adjacent intersections, etc It can simply incorporate directionality, speed limits, truck percentages, lane widths, etc) This method was ruled out because of inability

to calculate level of service for the specific cross-section on much of Missouri Flat Road where TWLTL is present (see notation in pop-up window in graphic: “Invalid Number of Lanes Value… Range is 2 to 9. Please try again”). The median type of TWLTL could be selected but only for two or more lanes in each direction of the roadway cross section. For this reason, the software would not analyze Missouri Flat Road which specifically had a single lane in each direction with the TWLTL median. HCS 7 also has a “Two Lane” highway calculation module, but has no feature to make the median configured as a TWLTL. This significant omission in the method makes it an inappropriate tool to try and analyze the traffic condition on Missouri Flat Road, and so the HCS 7 software was eliminated as a tool to analyze traffic in this report.



screen shot from HCS 7 software

3. The El Dorado County **“planning level”** method (only variables are <u>total</u> two-way volume and number of lanes in the type of cross-section; the method is very limited” having no consideration for lane widths, speeds or ability to look at TWLTL, etc.). The method is very conservative and yields the worst-case results by consistently putting roads with high volumes into the LOS F category, when there is no consideration that the side street volumes might be very relatively low, and the overall average of vehicle delay is also low. If the speeds of traffic on the main street are maintained, and it operates more like a freeway lane in that there are no delays or stops, even though side street traffic may have a very difficult time finding gaps in traffic to be able to enter the Missouri Flat Road traffic during peak time periods at intersections or driveways where there are no traffic signals installed, if the speeds of the main road are still maintaining at the posted speed limit it is not appropriate to label the level of service on the facility to LOS F conditions. This inaccurately makes it appear that there is a traffic jam taking place, and speeds are slow, when in actuality it is only the side street vehicles that are delayed at the LOS F condition. It may also only be a small number of cars on the side streets, such as is the case along the Missouri Flat Road corridor at Enterprise or Industrial. In summary, this planning level method is a simple tool that enables a quick result, but the result if shown at say, LOS F, should be further evaluated to see if the LOS F condition would really exist given more information into the overall traffic profile

and lane geometry. This was the engineering judgment that was used in this report, to conduct the planning level roadway segment analysis, and then provide additional information from the microsimulation tool SimTraffic so that a more accurate calculation of vehicle delay could be produced. The tables in this report that summarize roadway segment levels of service show the results from both methods, the microsimulation SimTraffic method, as well as the El Dorado County planning level method. The microsimulation SimTraffic method, being more accurate, governs the results and over-rides any results from the planning method. Both are shown to provide clarification and understanding as to how different methods focus on different things. The SimTraffic microsimulation is by far the best and most accurate method, but the simple planning level method can give results where it is not feasible to build a microsimulation model (time and/or budget constraints).

In the report, the tables that show results for the arterial roadway segment analyses for all scenarios, have two parts. The first analysis method is shown at the top section of the table summarizing an average vehicle delay for each roadway segment analyzed with the SimTraffic microsimulation software (based on HCM 2010 procedures), and the resulting speeds of traffic. The level of service is based on the calculated delay for vehicles, based on numerous factors built into the microsimulation model.

The results in the lower half of the table are for the County's generic planning level analysis, also based on HCM 2010 and a limited cross-section description (such as 4AD which is a 4 lane divided arterial, and 2A which is a two lane arterial), but with numerous assumptions not necessarily specific to the roadway being analyzed. The total segment volume (both directions) is summed and divided by a single capacity to determine a level of service for the segment. This is a quick method, but it has many limitations including any ability to consider directionality of traffic, what kind of median is present or not, or whether there are any turn lanes, etc. or how wide are the lanes or the shoulders of the paved road. Based on comparisons between the two halves of the table, it can be seen that the LOS F conditions calculated using the planning method are actually LOS B or better in the microsimulation method, and the LOS B conditions also correlate with the intersection analyses for nearby intersections. This is because the microsimulation method is calculating the delay for the overall segment and not just the side streets.

Section A.6 Planning Level Segment Analyses

NOTE from County[16]: The County's TIA Guidelines allow the use of "planning level thresholds" as the default methodology for roadway segment analysis. These thresholds are quick to apply and result in conservative analysis results, but do not account for lane widths, speeds, and other roadway characteristics. The applicant may elect to provide HCM-based analysis, and this approach is generally preferred by the County DOT. Because the results of Prism's analysis using planning level thresholds were not consistent with field observations, County staff directed the applicant to perform HCM-based analysis.

Planning Level Analysis yields LOS F results for many segment locations, but this is primarily indicative of an LOS F condition on the side streets, not the main road. This generic method does not correctly show the LOS A/B condition that exists on Missouri Flat Road through traffic (as can be seen in Table ES.2 and ES.3). This through traffic is primarily moving at or near posted speed limits, indicating a lack of congestion. However, there are fewer gaps in traffic due to the high volume of through traffic, resulting in higher delays for side street traffic (much smaller volumes), trying to enter the road. Table 4 summarizes the segment levels of service for Missouri Flat and Pleasant Valley Roads, using two methods for comparison: SimTraffic microsimulation (best), and simple planning level (least accurate).

Table 4 has two parts or two analyses shown. The first is the sophisticated SimTraffic HCM 2010 microsimulation method which takes into consideration all adjacent intersections, signal timings, delays, turning movements, and medians which may be a two-way left turn lane (TWLTL) or a left turn pocket, or even a stop sign or signal. It also considers the specific speed limits and saturation flow rates determined from field data measurements. The results shown at the top section of

[16] From "Peer Review of the Dorado Oaks Transportation Impact Study, 5/1/2019"

Table 4 are summarized as an average vehicle delay for each roadway segment as well as the corresponding level of service (based on HCM 2010), and the resulting speeds of traffic. The level of service is based on the calculated delay, which is based on numerous factors built into the microsimulation model.

The results in the lower half of the table are for the County's generic planning level analysis, also based on HCM 2010 and a limited cross-section description (such as 4AD which is a 4 lane divided arterial, and 2A which is a two lane arterial). The total segment volume (both directions) is summed and divided by a single capacity to determine a level of service for the segment. This is a quick method, but it has many limitations including any ability to consider directionality of traffic, what kind of median is present or not, or whether there are any turn lanes, etc. or how wide are the lanes or the shoulders of the paved road. Based on comparisons between the two halves of the table, it can be seen that the LOS F conditions calculated using the planning method are actually LOS B or better in the microsimulation method. This is because the microsimulation method is calculating the delay for the segment and not the side streets.

Table 4. Existing Year 2018 Link Segment Roadway Level of Service Summary

COUNTY PLANNING LEVEL SEGMENT ANALYSIS		YEAR 2018				
Road		AM Peak		PM Peak		
Type*	ARTERIAL SEGMENT LOCATION	VOL	LOS	VOL	LOS	ADT
4AD	Missouri Flat Plaza to US 50 WB Ramps	1440	B	2106	D	23138
4AD	Missouri Flat US 50 WB Ramps to EB Ramps	1901	D	2434	D	23139
4AD	Missouri Flat US 50 EB Ramps to Mother Lode	2128	D	2513	D	33710
4AD	Missouri Flat Mother Lode to Forni	1833	C	2365	D	33710
4AD	Missouri Flat Forni to Golden Center	1682	C	2049	D	23609
2A	Missouri Flat Golden Center to China Garden	1767	**F**	2020	**F**	23611
2A	Missouri Flat China Garden to Industrial	1428	D	1808	**F**	21011
2A	Missouri Flat Industrial to Enterprise	1436	D	1680	**F**	21011
2A	Missouri Flat Enterprise to Pleasant Valley	1355	D	1651	**F**	17331
2A	Pleasant Valley Missouri Flat to Faith	1238	D	1597	E	15004
2A	Pleasant Valley Faith to China Garden	1240	D	1579	E	15000
2A	Pleasant Valley China Garden to Fowler	1181	D	1585	E	15000
2A	Pleasant Valley Missouri Flat to Commerce	1131	D	974	D	13500
2A	Pleasant Valley Commerce to Patterson	1048	D	983	D	13500
2A	Pleasant Valley Patterson to Forni	1012	D	873	D	9600
2A	Pleasant Valley Forni to SR 49 (south)	948	D	961	D	9600
***2A HCM 2010 Planning Level Capacity: LOS A=650, LOS B=750, LOS C=850, LOS D=1540, LOS E=1650**						
***4AD HCM 2010 Planning Level Capacity: LOS A=1390, LOS B=1620, LOS C=1850, LOS D=3220, LOS E=3290**						

ADT Source: Caltrans Traffic Volumes 2015, and El Dorado County Traffic County Annual Summary 2015
Capacity Source: El Dorado County Peak Hour Roadway Segment LOS Criterion, Table 1.
Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

The planning level method gives a quick idea of what the side street level of service would be for similar corresponding volumes. When comparing these planning results to the actual nearby intersection results, the Missouri Flat Road level of service is usually LOS A or LOS B, and the side street approaches at the intersections are LOS F (such as at Missouri Flat Road and Industrial or at Enterprise, see table ES.2).

Table 4 shows 4AD and 2A "planning level" roadway capacities in the table footer. The County has indicated that the 2A designation for Missouri Flat Road from Golden Center to Pleasant Valley Road will eventually upgrade (by CIP) to 4AD by the Year 2035, and this is reflected in relevant analyses in this report. More details on the County's planning level of service criteria for street segments is shown in Table 5.

Table 5. El Dorado County's Peak Hour Roadway Segment LOS Criterion[17]

CLASS		HCM 2010 LOS					HCM 6th Edition				
		A	B	C	D	E	A	B	C	D	E
2R	Minor Two-Lane Highway	-	330	710	1,310	2,480	-	330	710	1,310	2,480
2U	Major Two-Lane Highway	-	330	710	1,310	2,480	-	330	710	1,310	2,480
4M	Multilane Four-Lane Highway	-	1,790	2,580	3,290	3,660	-	1,770	2,540	3,160	3,600
2A	Two-Lane Arterial	-	-	850	1,540	1,650	-	-	640	1,310	1,510
4AU	Four-Lane Arterial, Undivided	-	-	1,760	3,070	3,130	-	-	1,360	2,770	3,030
4AD	Four-Lane Arterial, Divided	-	-	1,850	3,220	3,290	-	-	1,430	2,910	3,180
6AD	Six-Lane Arterial, Divided	-	-	2,760	4,680	4,710	-	-	2,210	4,480	4,790
2F	Two Freeway Lanes	-	2,070	2,880	3,590	4,150	-	2,150	2,960	3,610	4,100
2FA	Two Freeway Lanes + Auxiliary Lane	-	2,610	3,630	4,520	5,230	-	3,150	3,960	4,610	5,100
3F	Three Freeway Lanes	-	3,100	4,320	5,380	6,230	-	3,230	4,440	5,420	6,150
3FA	Three Freeway Lanes + Auxiliary Lane	-	3,640	5,070	6,320	7,310	-	4,230	5,440	6,420	7,150
4F	Four Freeway Lanes	-	4,140	5,760	7,180	8,310	-	4,300	5,930	7,220	8,200
W22	Minor Two-Lane Highway	-	330	710	1,310	2,480	-	330	710	1,310	2,480
W20	Minor Two-Lane Highway	-	330	710	1,310	2,480	-	330	710	1,310	2,480
W18	Minor Two-Lane Highway	-	330	710	1,310	2,480	-	330	710	1,310	2,480

Notes:

(1) Threshold reductions between HCM 2010 and HCM 6th Edition are shown in red text and highlighted
(2) HCM 2010 Freeway LOS based on Exhibit 10-8, Urban Area, Rolling Terrain, K-factor of 0.09, and D-factor of 0.60
(3) HCM 6th Edition Freeway LOS based on Exhibits 12-39 and 12-40, Urban Area/Rural Area, Rolling Terrain, K-factor of 0.09, and D-factor of 0.60
(4) HCM 2010 Multilane Highway LOS based on Exhibit 14-19, Urban Area/Rural Area, Rolling Terrain, K-factor of 0.09, and D-factor of 0.60
(5) HCM 6th Edition Multilane Highway LOS based on Exhibits 12-41 and 12-42, Urban Area/Rural Area, Rolling Terrain, K-factor of 0.09, and D-factor of 0.60
(6) HCM 2010 2-lane highway LOS based on Exhibit 15-30, Class II Rolling, 0.09 K-factor, and D-factor of 0.60
(7) HCM 6th Edition 2-lane highway LOS based on Exhibit 15-46, Class II Rolling, 0.09 K-factor, and D-factor of 0.60
(8) HCM 2010 Arterial LOS based on Exhibit 16-14, K-factor of 0.09, D-factor of 0.60, posted speed 45 mi/h
(9) HCM 6th Edition Arterial LOS based on Exhibit 16-16, K-factor of 0.09, D-factor of 0.60, posted speed 45 mi/h

Year 2018 Roadway Segment Analyses Results

Table 4 shows that all locations for roadway segments calculate to LOS B or better conditions based on the HCM 2010 microsimulation model, SimTraffic, with the exception of the LOS D condition on Missouri Flat Road between Plaza Drive and the US 50 WB Ramps. These are satisfactory levels of service for roadway segments, and correspond to the levels of service calculated for intersections (see Table ES.2). The County has indicated that if it can be demonstrated (with other more reliable software) that the roadway segment (such as Missouri Flat Road or Pleasant Valley Road) does not operate at LOS F using the given service volumes, then an HCM 2010 analysis would override the planning level thresholds and these roadway segments may not be considered to be a significant impact. As a result, PRISM Engineering conducted two analyses for all roadway segments, to illustrate and show the differing results, but also offer an explanation as to why there are differences. All roadway segment analysis tables in this report for existing and future scenarios show the HCM 2010 microsimulation results for all roadway segment locations on the top half of each table, and the planning level results on the lower half. The planning level analyses generically yield a worst-case result for level of service of a segment, but it corresponds primarily to the level of service of side street traffic, and not the main street traffic. The main street traffic LOS can be better calculated with microsimulation tools based on HCM 2010 procedures such as SimTraffic, which was used in this study.

As per Policy TC-Xa (Table TC-2), Missouri Flat Road is allowed to operate at LOS F, provided the V/C ratio does not exceed 1.12 from U.S. Highway 50 to Mother Lode Drive, or 1.20 from Mother Lode Drive to China Garden Road.

[17] *Source: See page 11 of El Dorado County's Transportation Impact Study Guidelines.*

Table 10. Year 2018 Scenarios Roadway Segment Level of Service Summary

COUNTY PLANNING LEVEL SEGMENT ANALYSIS		YEAR 2018 AM Peak				YEAR 2018 PM Peak				
Road		No PROJ		w/PROJ		No PROJ		w/PROJ		
Type*	ARTERIAL SEGMENT LOCATION	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	ADT
4AD	Missouri Flat Plaza to US 50 WB Ramps	1440	B	1460	B	2106	D	2133	D	23138
4AD	Missouri Flat US 50 WB Ramps to EB Ramps	1901	D	1954	D	2434	D	2507	D	23139
4AD	Missouri Flat US 50 EB Ramps to Mother Lode	2128	D	2190	D	2513	D	2614	D	33710
4AD	Missouri Flat Mother Lode to Forni	1833	C	1899	D	2365	D	2472	D	33710
4AD	Missouri Flat Forni to Golden Center	1682	C	1782	C	2049	D	2175	D	23609
2A	Missouri Flat Golden Center to China Garden	1767	**F**	1877	**F**	2020	**F**	2167	**F**	23611
2A	Missouri Flat China Garden to Industrial	1428	D	1545	E	1808	**F**	1965	**F**	21011
2A	Missouri Flat Industrial to Enterprise	1436	D	1554	E	1680	**F**	1836	**F**	21011
2A	Missouri Flat Enterprise to Pleasant Valley	1351	D	1478	D	1651	**F**	1812	**F**	17331
2A	Pleasant Valley Missouri Flat to Faith	1238	D	1368	D	1597	E	1767	**F**	15004
2A	Pleasant Valley Faith to China Garden	1240	D	1235	D	1579	E	1575	E	15000
2A	Pleasant Valley China Garden to Fowler	1181	D	1176	D	1585	E	1580	E	15000
2A	Pleasant Valley Missouri Flat to Commerce	1131	D	1114	D	974	D	952	D	13500
2A	Pleasant Valley Commerce to Patterson	1048	D	1031	D	983	D	961	D	13500
2A	Pleasant Valley Patterson to Forni	1012	D	1012	D	873	D	873	D	9600
2A	Pleasant Valley Forni to SR 49 (south)	948	D	948	D	961	D	961	D	9600

***2A HCM 2010 Planning Level Capacity: LOS A=650, LOS B=750, LOS C=850, LOS D=1540, LOS E=1650**

***4AD HCM 2010 Planning Level Capacity: LOS A=1390, LOS B=1620, LOS C=1850, LOS D=3220, LOS E=3290**

ADT Source: Caltrans Traffic Volumes 2015, and El Dorado County Traffic County Annual Summary 2015
Capacity Source: El Dorado County Peak Hour Roadway Segment LOS Criterion, Table 1.
Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

The planning level analysis generically yields a worst-case result for level of service of a segment, corresponding primarily to the level of service of nearby side street traffic, and not the main street traffic. Even though the planning level method identifies some segments as LOS F, only the side street traffic along Missouri Flat Road is at LOS F in some locations. The main street traffic level of service for road segments is more accurately calculated using microsimulation tools based on HCM 2010 procedures such as SimTraffic, which was used in this study. The results in Table 10 in the main body of the report indicate that LOS D or better conditions prevails on Missouri Flat Road (far better than LOS F shown here in the appendix), and is LOS B or better conditions on Pleasant Valley Road. The project, therefore, does not create a significant impact to levels of service on the Missouri Flat Road arterial road segments (LOS D is OK), nor does the project create any significant impact to any of the Pleasant Valley Road arterial road segments (all LOS B or better). No roadway segment widening mitigations are recommended for this scenario.

- County Planning Segment Level of Service: Unacceptable at four locations in pm peak hour for Year 2018 without the project at LOS F (see Table 10). When project traffic is added in, one more segment goes to LOS F conditions, Pleasant Valley Road from Missouri Flat Road to Faith Lane.

Table 16. Year 2027 Scenarios Roadway Segment Level of Service Summary

COUNTY PLANNING LEVEL SEGMENT ANALYSIS		YEAR 2027 AM Peak				YEAR 2027 PM Peak				
Road Type*	ARTERIAL SEGMENT LOCATION	No PROJ		w/PROJ		No PROJ		w/PROJ		ADT
		VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	
4AD	Missouri Flat Plaza to US 50 WB Ramps	1562	B	1582	B	2285	D	2312	D	25105
4AD	Missouri Flat US 50 WB Ramps to EB Ramps	2063	D	2116	D	2641	D	2714	D	25106
4AD	Missouri Flat US 50 EB Ramps to Mother Lode	2309	D	2370	D	2726	D	2828	D	36575
4AD	Missouri Flat Mother Lode to Forni	1989	D	2055	D	2566	D	2673	D	36575
4AD	Missouri Flat Forni to Golden Center	1892	D	1992	D	2305	D	2431	D	26559
2A	Missouri Flat Golden Center to China Garden	2014	**F**	2124	**F**	2302	**F**	2449	**F**	26914
2A	Missouri Flat China Garden to Industrial	1122	D	1239	D	1736	**F**	1893	**F**	18560
2A	Missouri Flat Industrial to Enterprise	1107	D	1225	D	1613	E	1769	**F**	18345
2A	Missouri Flat Enterprise to Pleasant Valley	1048	D	1175	D	1569	E	1729	**F**	15110
2A	Pleasant Valley Missouri Flat to Faith	1085	D	1215	D	1517	D	1687	**F**	13777
2A	Pleasant Valley Faith to China Garden	1054	D	1049	D	1500	D	1496	D	13590
2A	Pleasant Valley China Garden to Fowler	1018	D	1013	D	1372	D	1367	D	12961
2A	Pleasant Valley Missouri Flat to Commerce	1105	D	1088	D	925	D	904	D	13021
2A	Pleasant Valley Commerce to Patterson	1100	D	1083	D	1032	D	1011	D	14175
2A	Pleasant Valley Patterson to Forni	1063	D	1063	D	917	D	917	D	10080
2A	Pleasant Valley Forni to SR 49 (south)	1010	D	1010	D	1023	D	1024	D	10224

***2A HCM 2010 Planning Level Capacity: LOS A=650, LOS B=750, LOS C=850, LOS D=1540, LOS E=1650**

***4AD HCM 2010 Planning Level Capacity: LOS A=1390, LOS B=1620, LOS C=1850, LOS D=3220, LOS E=3290**

ADT Source: Caltrans Traffic Volumes 2015, and El Dorado County Traffic County Annual Summary 2015
Capacity Source: El Dorado County Peak Hour Roadway Segment LOS Criterion, Table 1.
Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

This more generic calculation gives some idea of the kind of level of service that would be expected for unsignalized side streets and driveways along these segments. In the Year 2018 scenario, there were four locations at LOS F conditions, but in this Year 2027 scenario it has dropped to just two locations. This improvement is attributable to the slight lowering of volumes on Missouri Flat Road and Pleasant Valley Road on account of the Diamond Springs Parkway diverting some traffic away from these sections of these roads. However, when the project traffic is added in, the level of service becomes LOS F at three more locations. This will improve to LOS D in the future when Missouri Flat Road is widened to 4 lanes as planned in the CIP (goes from 2A to 4AD by Year 2035).

- County Planning Segment Level of Service: Unacceptable at two locations for Year 2027 pm peak hour volumes plus the project (shown as LOS F in Table 16). When project traffic is added in, three more segments go to LOS F conditions under the planning method.

Table 20. Year 2035 Scenarios Roadway Segment Level of Service Summary

COUNTY PLANNING LEVEL SEGMENT ANALYSIS		YEAR 2035 AM Peak				YEAR 2035 PM Peak				
Road Type*	ARTERIAL SEGMENT LOCATION	No PROJ		w/PROJ		No PROJ		w/PROJ		ADT
		VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	
4AD	Missouri Flat Plaza to US 50 WB Ramps	1685	C	1705	C	2464	D	2490	D	27071
4AD	Missouri Flat US 50 WB Ramps to EB Ramps	2224	D	2277	D	2847	D	2921	D	27074
4AD	Missouri Flat US 50 EB Ramps to Mother Lode	2489	D	2551	D	2940	D	3041	D	39440
4AD	Missouri Flat Mother Lode to Forni	2144	D	2210	D	2767	D	2874	D	39439
4AD	Missouri Flat Forni to Golden Center	2102	D	2202	D	2561	D	2687	D	29509
4AD	Missouri Flat Golden Center to China Garden	2261	D	2371	D	2584	D	2732	D	30218
4AD	Missouri Flat China Garden to Industrial	1313	A	1430	B	1664	C	1821	C	19335
4AD	Missouri Flat Industrial to Enterprise	1371	A	1489	B	1546	B	1702	C	19677
4AD	Missouri Flat Enterprise to Pleasant Valley	1253	A	1380	A	1486	B	1647	C	15823
2A	Pleasant Valley Missouri Flat to Faith	1176	D	1306	D	1438	D	1608	E	13841
2A	Pleasant Valley Faith to China Garden	1151	D	1146	D	1421	D	1417	D	13686
2A	Pleasant Valley China Garden to Fowler	1153	D	1148	D	1578	E	1573	E	14810
2A	Pleasant Valley Missouri Flat to Commerce	1184	D	1167	D	877	D	855	D	13215
2A	Pleasant Valley Commerce to Patterson	1153	D	1135	D	1081	D	1060	D	14850
2A	Pleasant Valley Patterson to Forni	1113	D	1113	D	960	D	961	D	10560
2A	Pleasant Valley Forni to SR 49 (south)	1071	D	1071	D	1086	D	1086	D	10848

***2A HCM 2010 Planning Level Capacity: LOS A=650, LOS B=750, LOS C=850, LOS D=1540, LOS E=1650**

***4AD HCM 2010 Planning Level Capacity: LOS A=1390, LOS B=1620, LOS C=1850, LOS D=3220, LOS E=3290**

ADT Source: Caltrans Traffic Volumes 2015, and El Dorado County Traffic County Annual Summary 2015
Capacity Source: El Dorado County Peak Hour Roadway Segment LOS Criterion, Table 1.
Source: Year 2018 traffic counts taken by PRISM Engineering, mid-block totals, am, pm peak hour, plus Project

Table 20 shows the Year 2035 capacity analysis results for *link segments* using El Dorado County's planning method as defined in the first chapter, Table 5. The planning level calculations give a general indication of the level of service that would be expected for side streets of unsignalized intersections along these segments. In the Year 2018 pm scenario, there were four street segment locations at LOS F conditions, but in this Year 2035 pm scenario it has dropped to zero locations in the pm peak hour. This is because the width of Missouri Flat Road was assumed to be widened from 2A to 4AD (four lanes as shown in Table 20) and capacity therefore increased. Also, there was a lowering of volumes on Missouri Flat Road and Pleasant Valley Road on account of the Diamond Springs Parkway diverting some regional through traffic away from these sections of these roads. The Diamond Springs Parkway will connect Missouri Flat Road on the west to SR 49 on the east. In addition, there are some roads which will interface with Diamond Springs Parkway (DSP) between these two intersections (Intersections #18 and #19 in this study), such as Throwita Way on the south side and another street on the north side of DSP at the same location. It was assumed that a small portion of traffic would enter and leave at these locations in the analyses. For this reason, volumes between intersections #18 and #19 will not exactly match up because of this condition.

- County Planning Segment Level of Service: Acceptable at all locations for Year 2035 am and pm peak hour volumes with and without the project are at LOS E or better conditions. No further mitigations necessary.

Planning Level Impacts: Roadway Street Segment Planning LOS

The project has planning level road segment impacts to Pleasant Valley Road between Faith Lane and Missouri Flat Road according to Table 10 that show the level of service at LOS F for the existing conditions (on a link segment peak hour volume planning basis). This level of service methodology is conservative and often represents the level of service for drivers on side streets or driveways trying to find a gap in traffic to enter the main roadway. When drivers have difficulty finding gaps, some drivers take chances and cause slowing of traffic flows when cutting in to through traffic. Overall, all drivers are affected by this condition where gaps in traffic are rare, which also affects overall safety of the transportation system. The roadway planning level of service is an analysis method that compliments intersection analyses, and offers

additional insight as to how a roadway will likely operate based on cross section (the number of lanes) between intersections. The roadway level of service corresponds well to levels of service calculated for side streets using standard HCM 2010 methods for intersection calculation. Drivers on a side street or driveway waiting for a safe gap in traffic, are often challenged to do so and must sometimes wait long periods of time. This situation can contribute to drivers taking unsafe chances to get onto the main street.

Although the future Diamond Springs Parkway will help relieve some of the future traffic impact on Missouri Flat Road south of China Garden Road (by diverting traffic on Pleasant Valley Road / Missouri Flat Road to use the new parkway facility), there will still remain LOS F conditions until new traffic signals are installed at various intersections where signal warrants have been met (as identified in this report, Tables 13, 19, and 24). The project will add more than 10 peak hour trips to these affected roadways indicating it will have significant impact. Mitigations are required according to the County's criteria, and although Missouri Flat Road was anticipated in the County's CIP for improvements (from China Garden to Pleasant Valley Road), Pleasant Valley Road from Missouri Flat Road to Faith Lane and beyond was not anticipated for widening, or installation of roundabouts or traffic signals. Because the project will have significant impacts to street segments on Missouri Flat Road in the future, it can mitigate this impact by paying the fair share traffic impact fees as part of the County's CIP. The project's impacts to Pleasant Valley Road are also significant and were unanticipated by the County. These impacts would be mitigated by direct mitigation in the form of local intersection improvements, such as a roundabout or signalization at Faith Lane. It can be argued that although the County did not anticipate improvements being made along Pleasant Valley Road between Missouri Flat Road and Fowler Lane due to future growth, the road segment level of service for existing conditions alone along this segment is currently LOS F conditions and would indicate improvements would be needed (see Table 4 for a summary of this LOS F condition for existing pm peak hour). The current County LOS criteria are summarized in Table 5 for HCM 6th edition values.

Section A.7 Traffic Counts

TRAFFIC COUNTS PLUS

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EL DORADO COUNTY
FORNI RD. 200' N/O S.R. 49

forni 7
Site Code: 7

Start Time	21-Feb-18 Wed	NB A.M.	NB P.M.	Hour Totals A.M.	Hour Totals P.M.	SB A.M.	SB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		0	34			0	31			65
12:15		0	33			2	40			75
12:30		0	31			0	24			55
12:45		3	31	3	129	0	35	2	130	69
01:00		0	18			1	47			66
01:15		0	39			0	27			66
01:30		1	32			0	25			58
01:45		0	38	1	127	0	39	1	138	77
02:00		0	43			0	36			79
02:15		0	37			1	31			69
02:30		0	***38***			1	37			76
02:45		2	***33***	2	151	1	***69***	3	173	105
03:00		0	***53***			0	***37***			90
03:15		0	***39***			0	***46***			85
03:30		2	34			0	***50***			86
03:45		2	34	4	160	2	45	2	178	83
04:00		2	31			3	45			81
04:15		2	30			2	40			74
04:30		1	34			2	57			94
04:45		3	36	8	131	2	39	9	181	80
05:00		2	40			2	56			100
05:15		3	39			4	47			93
05:30		4	40			5	42			91
05:45		2	27	11	146	5	39	16	184	73
06:00		4	27			6	32			69
06:15		7	29			9	31			76
06:30		13	24			12	23			72
06:45		25	16	49	96	14	23	41	109	78
07:00		***35***	18			***20***	20			***93***
07:15		***52***	11			***43***	15			***121***
07:30		***69***	19			***64***	14			***166***
07:45		***66***	6	222	54	***30***	16	157	65	***118***
08:00		28	8			16	25			77
08:15		35	8			17	20			80
08:30		38	9			29	17			93
08:45		32	4	133	29	15	4	77	66	55
09:00		22	5			17	13			57
09:15		35	2			24	3			64
09:30		33	4			27	3			67
09:45		27	5	117	16	21	6	89	25	59
10:00		30	3			21	3			57
10:15		21	5			24	4			54
10:30		41	2			23	1			67
10:45		31	6	123	16	31	3	99	11	71
11:00		21	2			29	3			55
11:15		25	3			29	1			58
11:30		23	1			30	2			56
11:45		33	1	102	7	34	0	122	6	68
Total		775	1062			618	1266			3721
Day Total		1837				1884				
Percent		42.2%	57.8%			32.8%	67.2%			
Peak		07:00	02:30			07:00	02:45			07:00
Vol.		222	163			157	202			498
P.H.F.		0.804	0.769			0.613	0.732			0.750

TRAFFIC COUNTS PLUS

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EL DORADO COUNTY
MISSOURI FLAT RD. 100' N/O PLAZA DR.

missouri 1
Site Code: 1

Start Time	21-Feb-18 Wed	NB A.M.	NB P.M.	Hour Totals A.M.	Hour Totals P.M.	SB A.M.	SB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		3	85			3	117			208
12:15		4	82			2	92			180
12:30		5	97			2	86			190
12:45		0	95	12	359	0	87	7	382	182
01:00		1	70			3	80			154
01:15		3	81			1	91			176
01:30		2	84			0	81			167
01:45		1	78	7	313	0	78	4	330	157
02:00		0	***98***			3	69			170
02:15		1	***114***			1	***102***			218
02:30		2	***91***			1	***153***			247
02:45		2	***83***	5	386	2	***117***	7	441	204
03:00		1	93			0	***82***			176
03:15		0	84			0	90			174
03:30		2	86			2	81			171
03:45		4	78	7	341	2	76	4	329	160
04:00		5	76			1	85			167
04:15		4	81			3	74			162
04:30		6	61			2	67			136
04:45		6	88	21	306	7	69	13	295	170
05:00		7	88			3	80			178
05:15		8	101			6	63			178
05:30		20	103			13	62			198
05:45		20	89	55	381	9	56	31	261	174
06:00		17	69			11	52			149
06:15		22	55			15	36			128
06:30		28	60			18	44			150
06:45		36	64	103	248	37	47	81	179	184
07:00		30	40			35	35			140
07:15		68	29			64	39			200
07:30		73	26			46	16			161
07:45		100	26	271	121	57	18	202	108	201
08:00		***87***	33			73	98			***291***
08:15		***88***	26			***87***	63			***264***
08:30		***158***	35			***77***	37			***307***
08:45		***141***	17	474	111	***111***	20	348	218	***289***
09:00		74	18			***79***	13			184
09:15		84	12			56	13			165
09:30		66	11			73	15			165
09:45		77	10	301	51	62	22	270	63	171
10:00		105	9			54	7			175
10:15		80	5			82	8			175
10:30		77	4			72	5			158
10:45		69	4	331	22	71	4	279	24	148
11:00		67	8			78	3			156
11:15		62	3			70	4			139
11:30		61	1			79	3			144
11:45		68	4	258	16	99	4	326	14	175
Total		1845	2655			1572	2644			8716
Day Total		4500				4216				
Percent		41.0%	59.0%			37.3%	62.7%			
Peak		08:00	02:00			08:15	02:15			08:00
Vol.		474	386			354	454			1151
P.H.F.		0.750	0.846			0.797	0.742			0.937

TRAFFIC COUNTS PLUS

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EL DORADO COUNTY
MISSOURI FLAT RD. 100' S/O PLAZA DR.
NORTHBOUND

missouri 2-n
Site Code: 2

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	8	**261**			269
12:15	9	**272**			281
12:30	9	**256**			265
12:45	2	**257**	28	1046	259
01:00	2	247			249
01:15	12	244			256
01:30	5	244			249
01:45	6	247	25	982	253
02:00	2	229			231
02:15	1	279			280
02:30	4	254			258
02:45	11	221	18	983	232
03:00	4	257			261
03:15	4	230			234
03:30	6	247			253
03:45	11	208	25	942	219
04:00	7	220			227
04:15	8	226			234
04:30	16	221			237
04:45	21	193	52	860	214
05:00	21	262			283
05:15	32	249			281
05:30	35	226			261
05:45	45	204	133	941	249
06:00	56	182			238
06:15	65	163			228
06:30	79	152			231
06:45	90	121	290	618	211
07:00	87	119			206
07:15	139	79			218
07:30	158	81			239
07:45	153	65	537	344	218
08:00	178	67			**245**
08:15	189	59			**248**
08:30	238	83			**321**
08:45	226	56	831	265	**282**
09:00	167	36			203
09:15	203	37			240
09:30	186	36			222
09:45	198	26	754	135	224
10:00	218	30			248
10:15	201	19			220
10:30	202	22			224
10:45	193	19	814	90	212
11:00	**196**	14			210
11:15	**222**	19			241
11:30	**218**	8			226
11:45	**217**	13	853	54	230
Total	4360	7260			11620
Day Total	11620				
Percent	37.5%	62.5%			
Peak	11:00	12:00			08:00
Vol.	853	1046			1096
P.H.F.	0.944	0.961			0.854

TRAFFIC COUNTS PLUS

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EL DORADO COUNTY
MISSOURI FLAT RD. 100' S/O PLAZA DR.
SOUTHBOUND

missouri 2-s
Site Code: 2

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	12	284			296
12:15	13	265			278
12:30	7	295			302
12:45	7	246	39	1090	253
01:00	4	265			269
01:15	11	267			278
01:30	4	270			274
01:45	6	254	25	1056	260
02:00	4	241			245
02:15	8	**256**			**264**
02:30	1	**295**			**296**
02:45	6	**301**	19	1093	**307**
03:00	5	**272**			**277**
03:15	0	252			252
03:30	4	243			247
03:45	3	227	12	994	230
04:00	4	255			259
04:15	9	226			235
04:30	6	265			271
04:45	17	224	36	970	241
05:00	14	245			259
05:15	21	259			280
05:30	33	214			247
05:45	27	215	95	933	242
06:00	22	193			215
06:15	55	182			237
06:30	63	172			235
06:45	84	155	224	702	239
07:00	79	132			211
07:15	122	136			258
07:30	122	107			229
07:45	123	103	446	478	226
08:00	147	141			288
08:15	151	129			280
08:30	183	110			293
08:45	187	73	668	453	260
09:00	153	62			215
09:15	163	52			215
09:30	166	46			212
09:45	177	61	659	221	238
10:00	200	35			235
10:15	192	43			235
10:30	205	36			241
10:45	196	15	793	129	211
11:00	**198**	17			215
11:15	**219**	24			243
11:30	**216**	22			238
11:45	**291**	12	924	75	303
Total	3940	8194			12134
Day Total	12134				
Percent	32.5%	67.5%			
Peak	11:00	02:15			02:15
Vol.	924	1124			1144
P.H.F.	0.794	0.934			0.932

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 300' N/O FORNI RD.

missouri 3
Site Code: 3

Start Time	21-Feb-18 Wed	NB A.M.	NB P.M.	Hour Totals A.M.	Hour Totals P.M.	SB A.M.	SB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		12	356			11	293			672
12:15		7	355			13	350			725
12:30		8	336			10	300			654
12:45		10	338	37	1385	9	321	43	1264	678
01:00		5	347			11	349			712
01:15		3	333			5	343			684
01:30		4	358			3	298			663
01:45		7	323	19	1361	11	311	30	1301	652
02:00		6	324			10	320			660
02:15		6	359			3	323			691
02:30		5	343			10	330			688
02:45		7	329	24	1355	7	420	30	1393	763
03:00		14	382			6	369			771
03:15		14	342			9	347			712
03:30		15	350			9	371			745
03:45		17	315	60	1389	6	382	30	1469	720
04:00		24	348			7	372			751
04:15		29	315			18	***413***			775
04:30		28	***347***			12	***387***			774
04:45		55	***325***	136	1335	27	***415***	64	1587	822
05:00		90	***458***			34	***373***			955
05:15		91	***349***			31	407			878
05:30		98	319			50	330			797
05:45		114	257	393	1383	85	352	200	1462	808
06:00		171	260			73	291			795
06:15		178	234			91	265			768
06:30		201	226			104	210			741
06:45		190	189	740	909	199	233	467	999	811
07:00		221	210			199	181			811
07:15		***350***	136			323	168			***977***
07:30		***364***	114			241	139			***858***
07:45		***362***	88	1297	548	***282***	125	1045	613	***857***
08:00		***293***	113			***276***	153			***835***
08:15		303	117			***309***	134			863
08:30		356	97			***256***	116			825
08:45		366	82	1318	409	256	107	1097	510	811
09:00		278	86			273	109			746
09:15		275	59			244	77			655
09:30		265	38			237	79			619
09:45		268	40	1086	223	248	69	1002	334	625
10:00		331	29			259	64			683
10:15		297	38			242	54			631
10:30		317	21			290	54			682
10:45		305	29	1250	117	248	43	1039	215	625
11:00		257	34			244	36			571
11:15		290	25			260	25			600
11:30		307	20			315	33			675
11:45		313	14	1167	93	293	17	1112	111	637
Total		7527	10507			6159	11258			35451
Day Total		18034				17417				
Percent		41.7%	58.3%			35.4%	64.6%			
Peak		07:15	04:30			07:45	04:15			07:15
Vol.		1369	1479			1123	1588			3527
P.H.F.		0.940	0.807			0.909	0.957			0.903

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 300' S/O FORNI RD.
NORTHBOUND

missouri 4-n
Site Code: 4

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	5	**241**			246
12:15	5	**249**			254
12:30	6	**213**			219
12:45	7	**243**	23	946	250
01:00	4	227			231
01:15	3	246			249
01:30	3	228			231
01:45	6	233	16	934	239
02:00	4	209			213
02:15	6	239			245
02:30	5	213			218
02:45	5	203	20	864	208
03:00	13	239			252
03:15	13	251			264
03:30	12	214			226
03:45	18	210	56	914	228
04:00	15	213			228
04:15	24	202			226
04:30	29	213			242
04:45	48	225	116	853	273
05:00	80	274			354
05:15	84	206			290
05:30	86	202			288
05:45	115	171	365	853	286
06:00	150	159			309
06:15	158	152			310
06:30	175	123			298
06:45	158	132	641	566	290
07:00	171	143			**314**
07:15	**256**	82			**338**
07:30	**272**	81			**353**
07:45	**281**	56	980	362	**337**
08:00	**219**	69			288
08:15	246	63			309
08:30	274	61			335
08:45	261	55	1000	248	316
09:00	186	54			240
09:15	194	38			232
09:30	190	29			219
09:45	205	26	775	147	231
10:00	248	17			265
10:15	210	28			238
10:30	239	13			252
10:45	210	14	907	72	224
11:00	190	18			208
11:15	208	16			224
11:30	212	12			224
11:45	210	6	820	52	216
Total	5719	6811			12530
Day Total	12530				
Percent	45.6%	54.4%			
Peak	07:15	12:00			07:00
Vol.	1028	946			1342
P.H.F.	0.915	0.950			0.950

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 300' S/O FORNI RD.
SOUTHBOUND

missouri 4-s
Site Code: 4

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	10	198			208
12:15	10	206			216
12:30	11	203			214
12:45	6	173	37	780	179
01:00	9	201			210
01:15	4	218			222
01:30	3	199			202
01:45	9	196	25	814	205
02:00	5	218			223
02:15	3	222			225
02:30	7	233			240
02:45	6	281	21	954	287
03:00	5	279			284
03:15	7	267			274
03:30	7	252			259
03:45	4	288	23	1086	292
04:00	7	288			295
04:15	11	272			283
04:30	12	**290**			302
04:45	21	**306**	51	1156	327
05:00	18	**270**			**288**
05:15	25	**291**			**316**
05:30	43	239			**282**
05:45	64	286	150	1086	**350**
06:00	49	227			276
06:15	68	195			263
06:30	70	161			231
06:45	131	174	318	757	305
07:00	138	151			289
07:15	**218**	111			329
07:30	**177**	104			281
07:45	**182**	108	715	474	290
08:00	**198**	111			309
08:15	201	98			299
08:30	177	95			272
08:45	156	84	732	388	240
09:00	190	85			275
09:15	168	60			228
09:30	152	75			227
09:45	155	47	665	267	202
10:00	161	47			208
10:15	155	48			203
10:30	176	42			218
10:45	157	31	649	168	188
11:00	182	27			209
11:15	142	20			162
11:30	204	27			231
11:45	200	15	728	89	215
Total	4114	8019			12133
Day Total	12133				
Percent	33.9%	66.1%			
Peak	07:15	04:30			05:00
Vol.	775	1157			1236
P.H.F.	0.889	0.945			0.883

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 100' S/O CHINA GARDEN RD.

missouri 5
Site Code: 5

Start Time	21-Feb-18 Wed	NB A.M.	NB P.M.	Hour Totals A.M.	Hour Totals P.M.	SB A.M.	SB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		3	208			16	164			391
12:15		2	221			8	174			405
12:30		5	184			11	176			376
12:45		6	***222***	16	835	6	147	41	661	381
01:00		5	***199***			10	191			405
01:15		1	***226***			4	193			424
01:30		2	***198***			3	187			390
01:45		5	186	13	809	8	173	25	744	372
02:00		3	190			3	176			372
02:15		3	204			2	186			395
02:30		5	177			3	210			395
02:45		6	193	17	764	5	231	13	803	435
03:00		11	223			6	249			489
03:15		12	207			5	238			462
03:30		9	195			2	210			416
03:45		19	185	51	810	3	217	16	914	424
04:00		14	169			5	235			423
04:15		27	157			1	248			433
04:30		26	191			5	***239***			461
04:45		49	180	116	697	24	***271***	35	993	524
05:00		71	214			13	***241***			539
05:15		80	163			21	***283***			547
05:30		81	186			26	213			506
05:45		106	137	338	700	50	259	110	996	552
06:00		129	130			44	205			508
06:15		148	130			49	174			501
06:30		162	116			56	184			518
06:45		144	130	583	506	80	172	229	735	526
07:00		164	133			101	129			***527***
07:15		235	63			167	117			***582***
07:30		243	62			146	97			***548***
07:45		***285***	49	927	307	132	91	546	434	***557***
08:00		***191***	60			161	89			501
08:15		***235***	62			159	94			550
08:30		***260***	56			128	84			528
08:45		229	48	915	226	104	79	552	346	460
09:00		179	50			137	78			444
09:15		183	23			142	55			403
09:30		181	27			127	63			398
09:45		208	22	751	122	131	42	537	238	403
10:00		201	12			133	49			395
10:15		202	19			123	44			388
10:30		215	12			138	44			409
10:45		191	10	809	53	147	26	541	163	374
11:00		186	20			***141***	31			378
11:15		190	13			***125***	24			352
11:30		182	9			***171***	25			387
11:45		197	4	755	46	***181***	15	618	95	397
Total		5291	5875			3263	7122			21551
Day Total		11166				10385				
Percent		47.4%	52.6%			31.4%	68.6%			
Peak		07:45	00:45			11:00	04:30			07:00
Vol.		971	845			618	1034			2214
P.H.F.		0.852	0.935			0.854	0.913			0.951

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 300' N/O S.R. 49
NORTHBOUND

missouri 6-n
Site Code: 6

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	3	157			160
12:15	1	161			162
12:30	1	**163**			164
12:45	3	**187**	8	668	190
01:00	3	**184**			187
01:15	0	**188**			188
01:30	3	147			150
01:45	7	156	13	675	163
02:00	1	151			152
02:15	4	158			162
02:30	5	140			145
02:45	6	158	16	607	164
03:00	8	204			212
03:15	12	153			165
03:30	8	161			169
03:45	24	150	52	668	174
04:00	19	132			151
04:15	25	133			158
04:30	30	144			174
04:45	58	141	132	550	199
05:00	75	149			224
05:15	90	148			238
05:30	88	148			236
05:45	101	126	354	571	227
06:00	136	93			229
06:15	137	96			233
06:30	167	101			268
06:45	147	116	587	406	263
07:00	**183**	92			**275**
07:15	**225**	53			**278**
07:30	**253**	50			**303**
07:45	**289**	34	950	229	**323**
08:00	179	55			234
08:15	211	50			261
08:30	243	42			285
08:45	188	42	821	189	230
09:00	170	38			208
09:15	166	24			190
09:30	157	26			183
09:45	184	17	677	105	201
10:00	175	11			186
10:15	171	13			184
10:30	174	11			185
10:45	159	10	679	45	169
11:00	139	15			154
11:15	151	10			161
11:30	163	8			171
11:45	169	5	622	38	174
Total	4911	4751			9662
Day Total	9662				
Percent	50.8%	49.2%			
Peak	07:00	00:30			07:00
Vol.	950	722			1179
P.H.F.	0.822	0.960			0.913

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
MISSOURI FLAT RD. 300' N/O S.R. 49
SOUTHBOUND

missouri 6-s
Site Code: 6

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	12	139			151
12:15	8	155			163
12:30	11	156			167
12:45	8	150	39	600	158
01:00	7	154			161
01:15	3	158			161
01:30	4	163			167
01:45	6	152	20	627	158
02:00	3	160			163
02:15	2	177			179
02:30	4	195			199
02:45	5	213	14	745	218
03:00	6	242			248
03:15	4	209			213
03:30	2	202			204
03:45	1	195	13	848	196
04:00	7	237			244
04:15	1	222			223
04:30	2	**240**			242
04:45	11	**258**	21	957	269
05:00	12	**237**			**249**
05:15	8	**243**			**251**
05:30	15	223			**238**
05:45	33	265	68	968	**298**
06:00	37	212			249
06:15	29	186			215
06:30	37	169			206
06:45	55	152	158	719	207
07:00	70	157			227
07:15	131	109			240
07:30	116	98			214
07:45	97	90	414	454	187
08:00	123	94			217
08:15	128	100			228
08:30	100	79			179
08:45	78	82	429	355	160
09:00	102	76			178
09:15	119	55			174
09:30	104	66			170
09:45	114	42	439	239	156
10:00	107	55			162
10:15	120	43			163
10:30	109	40			149
10:45	119	28	455	166	147
11:00	**129**	27			156
11:15	**114**	24			138
11:30	**134**	23			157
11:45	**173**	14	550	88	187
Total	2620	6766			9386
Day Total	9386				
Percent	27.9%	72.1%			
Peak	11:00	04:30			05:00
Vol.	550	978			1036
P.H.F.	0.795	0.948			0.869

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
S.R. 49 100 W/O FAITH LN.

sr49-8
Site Code: 8

Start Time	21-Feb-18 Wed	WB A.M.	WB P.M.	Hour Totals A.M.	Hour Totals P.M.	EB A.M.	EB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		3	176			13	146			338
12:15		3	150			8	165			326
12:30		2	***157***			11	146			316
12:45		3	***179***	11	662	7	159	39	616	348
01:00		2	***158***			7	179			346
01:15		3	***177***			2	155			337
01:30		3	157			7	154			321
01:45		9	157	17	649	6	155	22	643	327
02:00		1	146			3	158			308
02:15		2	168			1	135			306
02:30		4	153			1	173			331
02:45		6	146	13	613	2	181	7	647	335
03:00		8	168			3	227			406
03:15		9	130			7	205			351
03:30		7	150			3	199			359
03:45		24	145	48	593	5	185	18	816	359
04:00		14	139			9	209			371
04:15		30	135			6	245			416
04:30		32	148			1	***230***			411
04:45		64	143	140	565	4	***265***	20	949	476
05:00		63	156			9	***248***			476
05:15		86	153			11	***258***			508
05:30		97	122			7	222			448
05:45		96	130	342	561	24	239	51	967	489
06:00		141	97			27	189			454
06:15		130	109			30	177			446
06:30		173	86			50	154			463
06:45		154	97	598	389	41	159	148	679	451
07:00		***203***	67			62	169			***501***
07:15		***256***	53			75	111			***495***
07:30		***264***	52			108	93			***517***
07:45		***247***	41	970	213	117	71	362	444	***476***
08:00		191	54			89	80			414
08:15		212	48			112	78			450
08:30		236	36			111	79			462
08:45		181	33	820	171	77	68	389	305	359
09:00		177	40			110	71			398
09:15		181	25			116	61			383
09:30		165	23			112	57			357
09:45		172	12	695	100	112	47	450	236	343
10:00		169	14			126	38			347
10:15		185	11			116	38			350
10:30		150	8			114	40			312
10:45		148	9	652	42	120	25	476	141	302
11:00		129	13			***126***	22			290
11:15		153	11			***125***	26			315
11:30		169	11			***142***	22			344
11:45		166	7	617	42	***184***	14	577	84	371
Total		4923	4600			2559	6527			18609
Day Total		9523				9086				
Percent		51.7%	48.3%			28.2%	71.8%			
Peak		07:00	00:30			11:00	04:30			07:00
Vol.		970	671			577	1001			1989
P.H.F.		0.919	0.937			0.784	0.944			0.962

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
S.R. 49 100' E/O CHINA GARDEN RD.

sr49-9
Site Code: 9

Start Time	21-Feb-18 Wed	EB A.M.	EB P.M.	Hour Totals A.M.	Hour Totals P.M.	WB A.M.	WB P.M.	Hour Totals A.M.	Hour Totals P.M.	Both Dir. Total
12:00		13	151			4	171			339
12:15		8	165			2	145			320
12:30		13	148			2	153			316
12:45		7	173	41	637	3	***174***	11	643	357
01:00		7	176			3	***155***			341
01:15		2	162			4	***164***			332
01:30		6	161			2	***158***			327
01:45		6	167	21	666	9	157	18	634	339
02:00		3	158			2	140			303
02:15		1	148			2	163			314
02:30		2	182			4	144			332
02:45		2	189	8	677	8	156	16	603	355
03:00		3	236			9	153			401
03:15		5	222			10	130			367
03:30		2	205			7	137			351
03:45		5	193	15	856	24	144	50	564	366
04:00		11	224			18	135			388
04:15		7	250			28	139			424
04:30		1	***244***			31	136			412
04:45		5	***259***	24	977	68	132	145	542	464
05:00		7	***255***			64	152			478
05:15		12	***264***			90	140			506
05:30		8	238			101	113			460
05:45		24	236	51	993	96	118	351	523	474
06:00		29	202			139	96			466
06:15		32	178			131	102			443
06:30		53	164			177	94			488
06:45		39	160	153	704	156	90	603	382	445
07:00		61	173			***197***	64			***495***
07:15		75	114			***269***	53			***511***
07:30		106	92			***260***	52			***510***
07:45		119	79	361	458	***238***	41	964	210	***477***
08:00		94	79			191	58			422
08:15		107	84			211	46			448
08:30		110	83			236	34			463
08:45		82	66	393	312	190	31	828	169	369
09:00		112	73			176	39			400
09:15		122	63			180	23			388
09:30		106	57			175	21			359
09:45		112	47	452	240	165	14	696	97	338
10:00		134	39			170	12			355
10:15		121	39			167	11			338
10:30		120	41			152	8			321
10:45		123	28	498	147	147	11	636	42	309
11:00		***139***	21			129	14			303
11:15		***123***	26			145	9			303
11:30		***152***	26			161	15			354
11:45		***190***	14	604	87	156	7	591	45	367
Total		2621	6754			4909	4454			18738
Day Total		9375				9363				
Percent		28.0%	72.0%			52.4%	47.6%			
Peak		11:00	04:30			07:00	00:45			07:00
Vol.		604	1022			964	651			1993
P.H.F.		0.795	0.968			0.896	0.935			0.975

TRAFFIC COUNTS PLUS

mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
S.R. 49 200' W/O MISSOURI FLAT RD.
EASTBOUND

sr49-10-e
Site Code: 10

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	4	117			121
12:15	4	115			119
12:30	4	109			113
12:45	3	140	15	481	143
01:00	4	145			149
01:15	1	122			123
01:30	4	108			112
01:45	3	106	12	481	109
02:00	1	112			113
02:15	2	97			99
02:30	3	109			112
02:45	3	**135**	9	453	138
03:00	1	**194**			195
03:15	4	**158**			162
03:30	3	**137**			140
03:45	5	127	13	616	132
04:00	13	126			139
04:15	9	116			125
04:30	7	137			144
04:45	9	124	38	503	133
05:00	23	151			174
05:15	29	136			165
05:30	14	147			161
05:45	27	105	93	539	132
06:00	36	87			123
06:15	51	82			133
06:30	56	75			131
06:45	53	87	196	331	140
07:00	79	104			**183**
07:15	**127**	41			**168**
07:30	**172**	38			**210**
07:45	**194**	22	572	205	**216**
08:00	**98**	30			128
08:15	126	32			158
08:30	125	45			170
08:45	97	31	446	138	128
09:00	85	29			114
09:15	89	24			113
09:30	94	19			113
09:45	104	21	372	93	125
10:00	104	13			117
10:15	95	15			110
10:30	100	17			117
10:45	97	10	396	55	107
11:00	99	11			110
11:15	113	9			122
11:30	114	4			118
11:45	105	6	431	30	111
Total	2593	3925			6518
Day Total	6518				
Percent	39.8%	60.2%			
Peak	07:15	02:45			07:00
Vol.	591	624			777
P.H.F.	0.762	0.804			0.899

TRAFFIC COUNTS PLUS

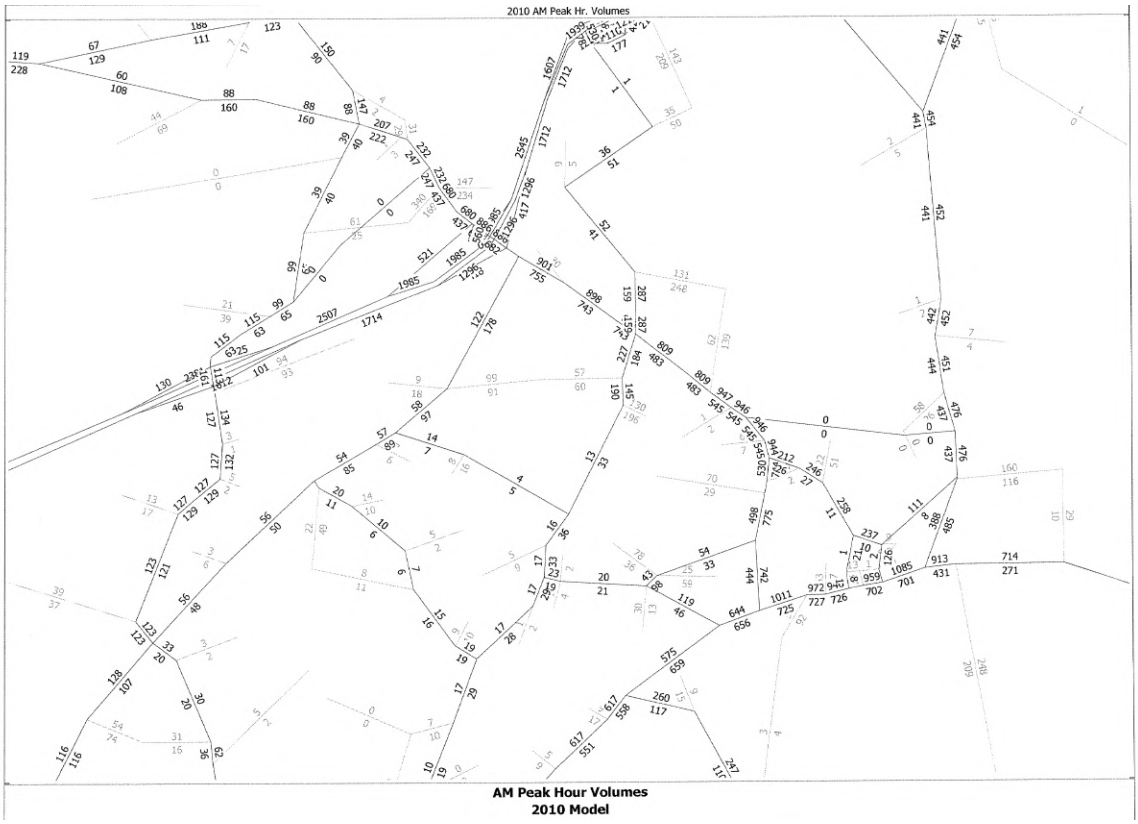
mietekm@comcast.net
925.305.4358

EL DORADO COUNTY
S.R. 49 200' W/O MISSOURI FLAT RD.
WESTBOUND

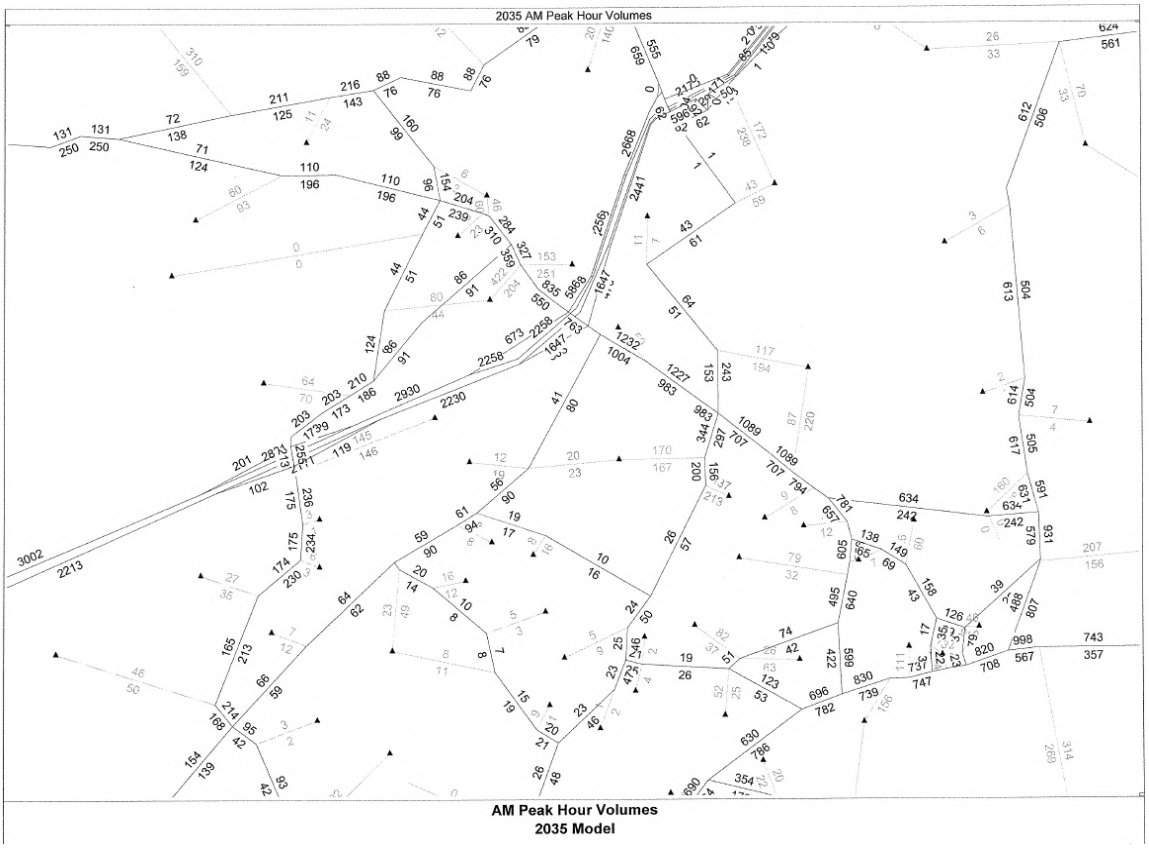
sr49-10-w
Site Code: 10

Start Time	Wed A.M.	21-Feb-18 P.M.	Hourly Totals A.M.	Hourly Totals P.M.	Interval Total
12:00	2	97			99
12:15	4	98			102
12:30	5	92			97
12:45	3	104	14	391	107
01:00	3	94			97
01:15	5	90			95
01:30	2	107			109
01:45	6	94	16	385	100
02:00	1	93			94
02:15	0	123			123
02:30	1	**125**			126
02:45	6	**142**	8	483	148
03:00	4	**165**			169
03:15	0	**129**			129
03:30	0	117			117
03:45	3	123	7	534	126
04:00	6	125			131
04:15	4	102			106
04:30	10	122			132
04:45	14	126	34	475	140
05:00	19	135			154
05:15	20	127			147
05:30	26	113			139
05:45	21	126	86	501	147
06:00	38	108			146
06:15	43	98			141
06:30	38	75			113
06:45	61	57	180	338	118
07:00	96	66			162
07:15	**201**	56			**257**
07:30	**156**	32			**188**
07:45	**121**	37	574	191	**158**
08:00	**131**	41			**172**
08:15	117	50			167
08:30	107	41			148
08:45	88	33	443	165	121
09:00	77	25			102
09:15	94	22			116
09:30	83	19			102
09:45	70	16	324	82	86
10:00	82	27			109
10:15	84	14			98
10:30	58	16			74
10:45	72	9	296	66	81
11:00	70	16			86
11:15	79	7			86
11:30	82	8			90
11:45	78	8	309	39	86
Total	2291	3650			5941
Day Total	5941				
Percent	38.6%	61.4%			
Peak	07:15	02:30			07:15
Vol.	609	561			775
P.H.F.	0.757	0.850			0.754

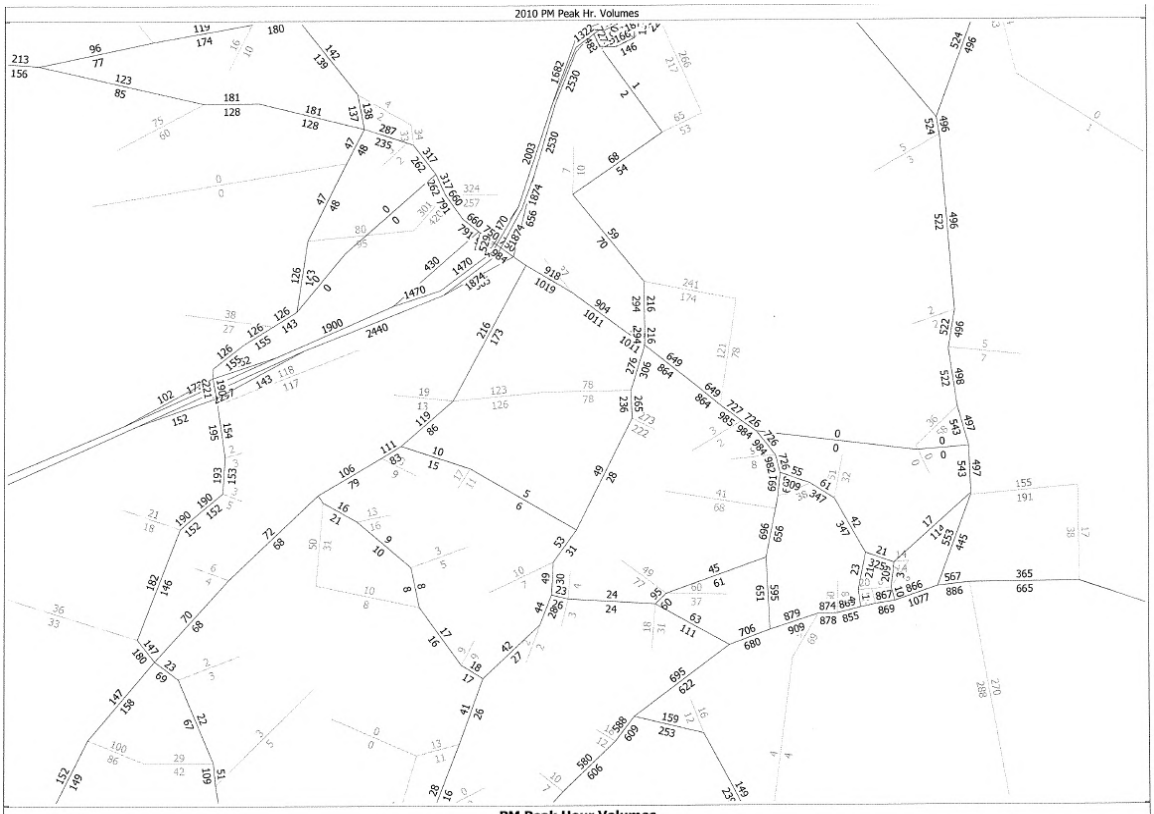
Section A.8. El Dorado County DOT Travel Demand Model Outputs, AM and PM Peak



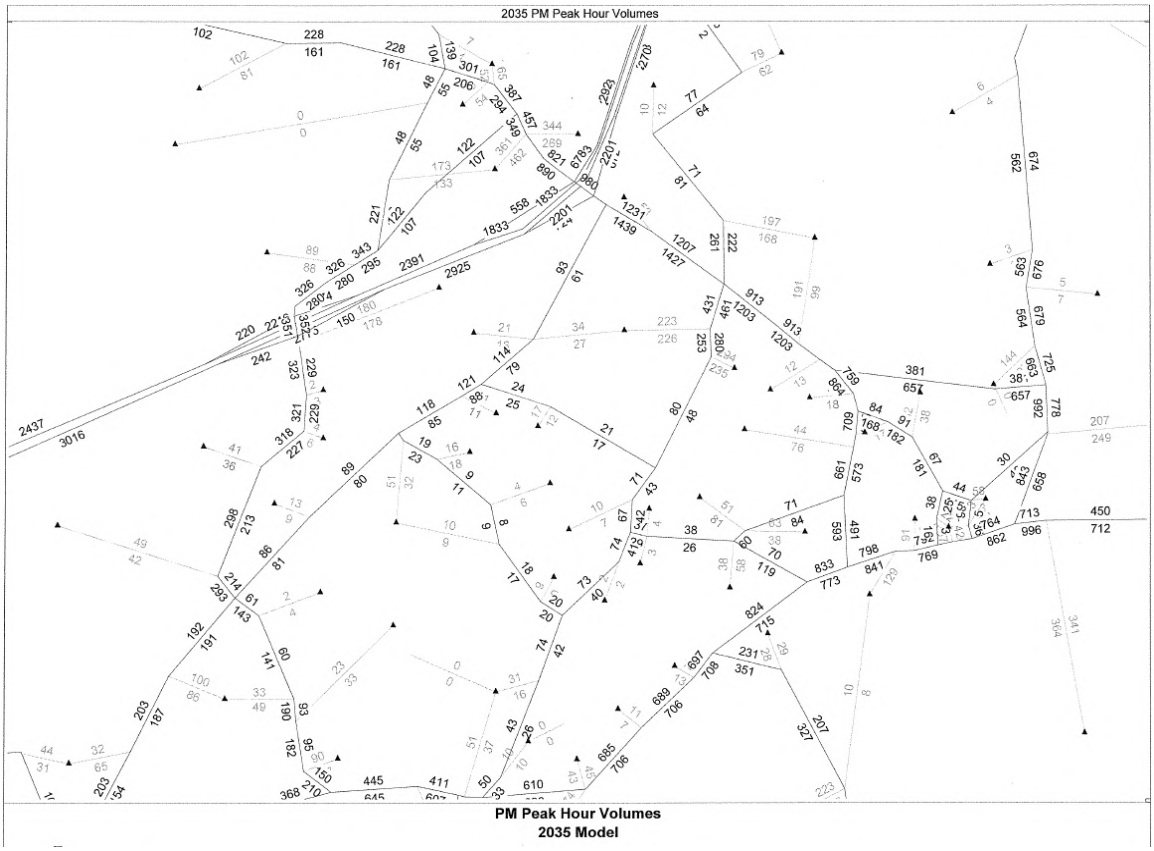
AM Peak Hour Volumes
2010 Model



AM Peak Hour Volumes
2035 Model



PM Peak Hour Volumes
2010 Model



PM Peak Hour Volumes
2035 Model

Section A.9. Synchro and SimTraffic Microsimulation HCM 2010 Capacity Analyses Output Sheets

These files are downloaded separately to County DOT Staff from DROPBOX location, and contained in separate and labeled PDF files for each scenario:

AM Peak Hour Year 2018

AM Peak Hour Year 2027

AM Peak Hour Year 2035

AM Peak Hour Year 2018 plus Project

AM Peak Hour Year 2027 plus Project

AM Peak Hour Year 2035 plus Project

PM Peak Hour Year 2018

PM Peak Hour Year 2027

PM Peak Hour Year 2035

PM Peak Hour Year 2018 plus Project

PM Peak Hour Year 2027 plus Project

PM Peak Hour Year 2035 plus Project

Section A.10 Synchro and SimTraffic Instructions

PRISM Engineering consulted extensively with County DOT Staff concerning the most appropriate traffic analysis methods to be used for this traffic study. The main two corridors of analysis were:

1. Missouri Flat Road from US 50 to Pleasant Valley Road, and
2. Pleasant Valley Road from SR 49 S to SR 49 N/Fowler Road.

The traffic control for Missouri flat Road varies significantly from the US 50 freeway interchange on the north to Pleasant Valley Road on the south. For example, traffic operations are complex at the freeway interchange. Signals are coordinated. Prism engineering conducted extensive field reviews with video for verification, to study signal timings, signal phasings, offset times, as well as vehicle operations in a detailed saturation flow study. All of this information was carefully edited into the Synchro and SimTraffic models developed for the study.

Other intersections along Missouri flat Road such as at Forni Road, are typical signalized intersections. Further to the south there are several intersections that are not signalized, but have side street stop control (TWSC). Another section of Missouri flat Road has a two way left turn lane in the median, but this is not consistent throughout the length of an signalized intersection, as there is a left turn pocket at the end signalized intersection at China Garden Road. For this reason, several different types of traffic models were developed and utilized in the study. For example, the traffic analysis option within the Synchro microsimulation traffic model is several fold, including:

1. HCM 2000, Signalized and Unsignalized
2. **HCM 2010 Signalized Summary, Detail, Pedestrians, Bicycles**
3. **HCM 2010 Roundabout, Detail**
4. **HCM AWSC, Detail**
5. **HCM 2010 TWSC, Detail, Pedestrians**
6. **HCM 2010 SimTraffic Arterial Analysis and**
7. **HCM 2010 SimTraffic Intersection Analysis**

In this study option 2, 3, 4, 5, 6, and option 7 were considered to calculate the appropriate level of service depending on the specific traffic control in place at each intersection. Option one, HCM 2000 was not utilized because the methodology is outdated. In the appendix output sheets for each scenario, there are two different files, one for the signalized intersections, and one for the unsignalized intersections (which were calculated using different appropriate methods). In each file there are typically several different kinds of reports based on different analysis options. Care should be taken when reviewing these files that the analysis method utilized is understood, and this can be seen specifically in the header of each page as a title (such as HCM 2010 TWSC, etc).

PRISM Engineering generally used the SimTraffic model output for signalized intersections, since the SimTraffic model encompassed the entire study area intersections, and used the HCM 2010 unsignalized methods for the remaining intersections (labeled as ZONE B in the appendix file names). ZONE B calculation summary sheets refer to intersections that had Two-Way Stop control (TWSC using HCM 2010 methodology), Roundabouts (using HCM 2010 methodology), All Way Stop Control (AWSC using HCM 2010 methodology).

There are many ways to calculate levels of service, different methods, and PRISM Engineering on consultation with the County Staff agreed that the microsimulation methods were most appropriate because of their ability to best match field conditions. The operations and animations in the SimTraffic models were able to replicate actual existing conditions, as verified by video of traffic in the field.

Synchro versus SimTraffic

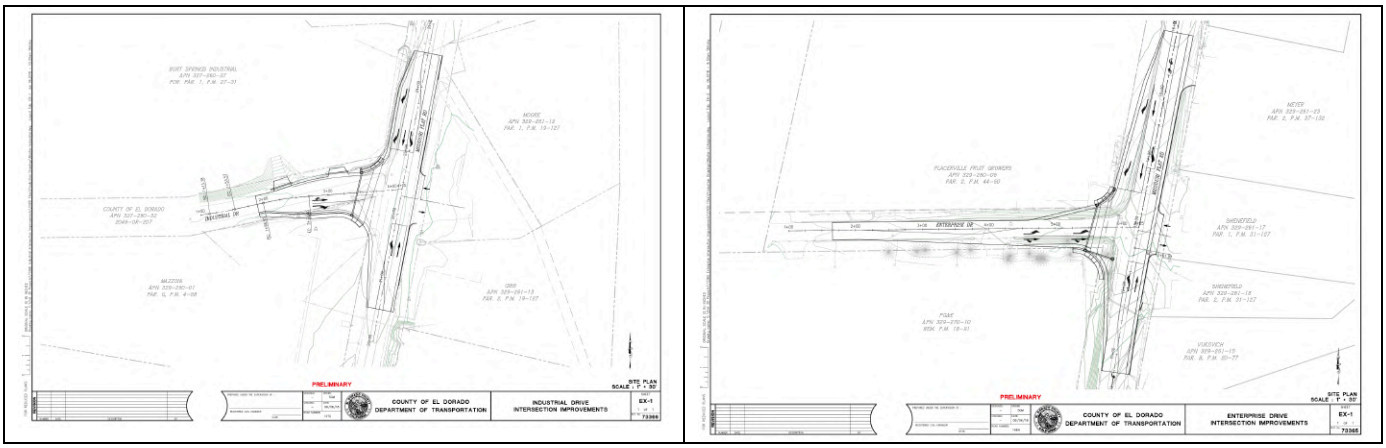
The County has instructed in their TIS Guidelines that both Synchro and SimTraffic use HCM methodology to analyze intersection operations. We utilized HCM 2010 methods in all cases. The County further states that "SimTraffic should be used to analyze traffic operations when the following conditions exist (or could exist in the future):

- Closely spaced intersections
- Over-capacity conditions (queues spill out of storage pockets)
- Uneven lane utilization
- Unusual lane configurations or alignment
- Unusual platoon dispersion or compression

For example, SimTraffic should be used at interchanges, such as Missouri Flat Road and El Dorado Hills Boulevard. If upstream or downstream intersections affect the traffic operations of a study intersection, SimTraffic should be used for analysis. Synchro should be used to analyze isolated intersections without unusual lane configurations or constraints."

The PRISM Engineering analysis followed these guidelines, as well as all procedures outlines in the TIS Guidelines document pertaining to Synchro Procedures and SimTraffic procedures.

Missouri Flat Road New Signal Installation Plan Sheets



These are the lane configurations used in the calculation of level of service at the intersections of Enterprise Dr and Industrial Dr along Missouri Flat Rd

Section A.11 Signal Warrant Analysis Worksheets

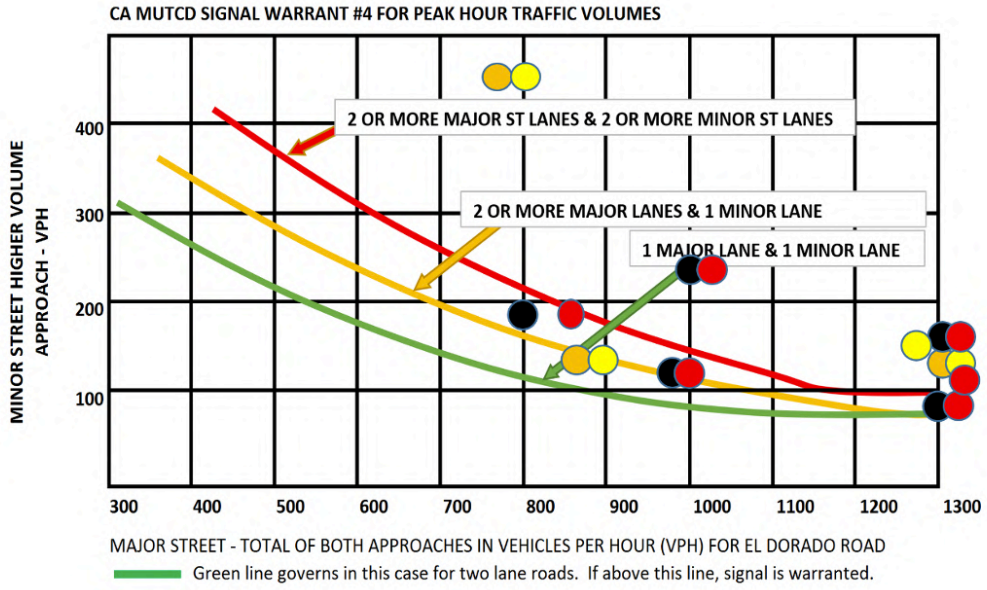
Signal Warrants for Year 2018 AM & PM Peak Hour Scenarios (supports Table 12 in report)

	AM 2018	AM+PROJ	PM 2018	PM+PROJ	MINOR STREET HIGHER VOLUME			
	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	AM	AM+PROJ	PM	PM+PROJ
Missouri Flat Rd at China Garden Rd	1526	1662	1900	2079	133	135	157	162
Pleasant Valley Rd at Faith Ln	1234	1269	1586	1725	5	137	14	95
Pleasant Valley Rd at China Garden Rd	1256	1272	1576	1599	19	19	40	40
Pleasant Valley Rd at Commerce Way	1098	1102	980	985	60	60	118	118
Pleasant Valley at Forni Rd	877	898	813	840	133	133	190	190
Pleasant Valley Rd at SR 49 S	775	794	1017	1036	445	447	235	243

Legend:

Signal is NOT Warranted
Signal IS Warranted

- AM 2018, Dot corresponds to Chart
- AM+PROJ, Dot corresponds to Chart
- PM 2018, Dot corresponds to Chart
- PM+PROJ, Dot corresponds to Chart



Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis

The color-coded dots in the chart correlate with the dots in table above, and are placed above the green line representing that the side street volume is high enough to meet the established warrant. The dots are placed vertically directly over the corresponding main street total of both approaches volume on Missouri Flat Road and Pleasant Valley Road at the specific intersection listed in the table above.

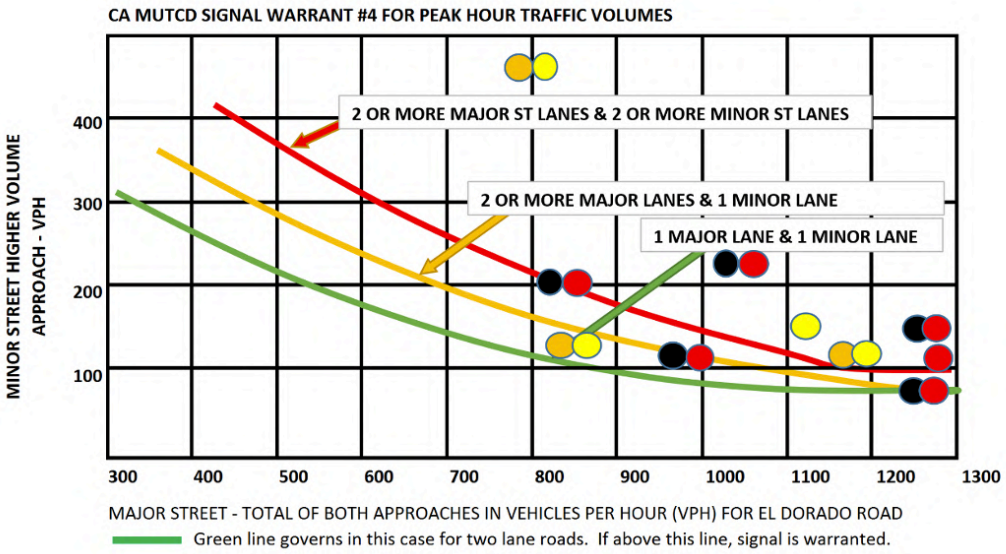
Signal Warrants for Year 2027 AM & PM Peak Hour Scenarios (supports Table 18 in report)

	AM 2027	AM+PROJ	PM 2027	PM+PROJ	MINOR STREET HIGHER VOLUME			
	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	AM	AM+PROJ	PM	PM+PROJ
Missouri Flat Rd at China Garden Rd	1236	1372	1824	2003	122	124	151	156
Pleasant Valley Rd at Faith Ln	1081	1116	1507	1646	5	137	13	94
Pleasant Valley Rd at China Garden Rd	1068	1084	1497	1520	18	18	38	38
Pleasant Valley Rd at Commerce Way	1153	1157	1029	1034	63	63	124	124
Pleasant Valley at Forni Rd	934	955	866	893	142	142	202	202
Pleasant Valley Rd at SR 49 S	825	844	1083	1102	474	476	250	258

Legend:

Signal is NOT Warranted
Signal IS Warranted

- AM 2027, Dot corresponds to Chart
- AM+PROJ, Dot corresponds to Chart
- PM 2027, Dot corresponds to Chart
- PM+PROJ, Dot corresponds to Chart



Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis

The color-coded dots in the chart correlate with the dots in table above, and are placed above the green line representing that the side street volume is high enough to meet the established warrant. The dots are placed vertically directly over the corresponding main street total of both approaches volume on Missouri Flat Road and Pleasant Valley Road at the specific intersection listed in the table above.

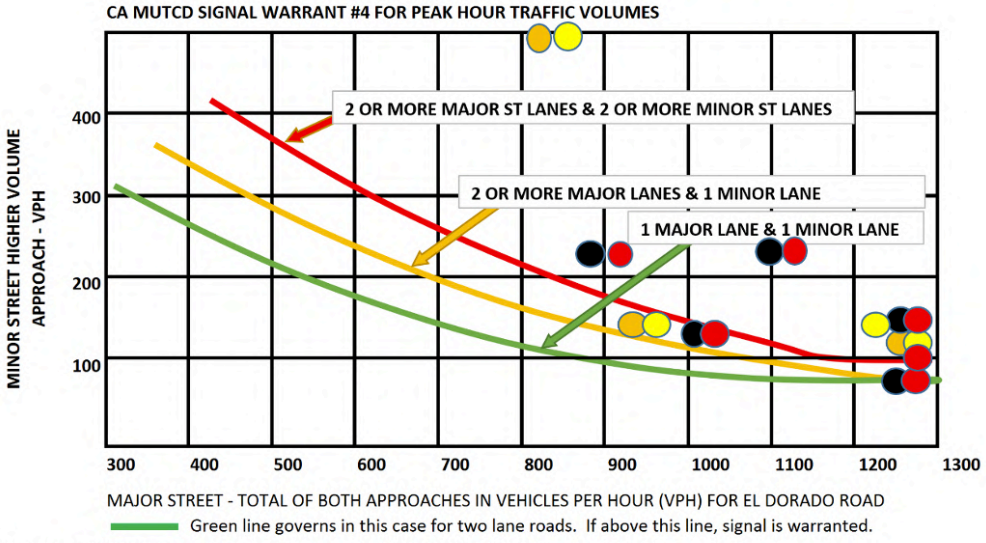
Signal Warrants for Year 2035 AM & PM Peak Hour Scenarios (supports Table 22 in report)

	AM 2035	AM+PROJ	PM 2035	PM+PROJ	MINOR STREET HIGHER VOLUME			
	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	TOTAL BOTH APPR MAJOR	AM	AM+PROJ	PM	PM+PROJ
Missouri Flat Rd at China Garden Rd	1427	1563	1748	1927	122	124	144	150
Pleasant Valley Rd at Faith Ln	1172	1207	1427	1566	5	137	13	94
Pleasant Valley Rd at China Garden Rd	1165	1181	1418	1441	18	18	36	36
Pleasant Valley Rd at Commerce Way	1208	1211	1078	1083	66	66	130	130
Pleasant Valley at Forni Rd	991	1012	919	946	150	150	215	215
Pleasant Valley Rd at SR 49 S	876	895	1149	1168	503	505	266	274

Legend:

Signal is NOT Warranted
Signal IS Warranted

- AM 2035, Dot corresponds to Chart
- AM+PROJ, Dot corresponds to Chart
- PM 2035, Dot corresponds to Chart
- PM+PROJ, Dot corresponds to Chart



Source: PRISM Engineering traffic counts and CA MUTCD Warrants analysis

The color-coded dots in the chart correlate with the dots in table above, and are placed above the green line representing that the side street volume is high enough to meet the established warrant. The dots are placed vertically directly over the corresponding main street total of both approaches volume on Missouri Flat Road and Pleasant Valley Road at the specific intersection listed in the table above.

Appendix I
Utilities & Service Systems

ESA

El Dorado Irrigation District

Letter No.: DS0621-155

June 3, 2021

VIA EMAIL

Kevin Sweeney
2700 S. Azusa Avenue
West Covina, CA 91792
Via Email: sweeneyko@aol.com

Subject: Facility Improvement Letter (FIL) 3472FIL, Dorado Oaks
Assessor's Parcel No. 329-310-010, 011, 012 and 329-301-015 & 020 (Diamond Springs)
EDC Project No: TM08-1474

Dear Mr. Sweeney:

This letter is in response to your request dated May 11, 2021 and is valid for a period of three years. If a Facility Plan Report (FPR) for your project is not submitted to El Dorado Irrigation District (EID or District) within three years of the date of this letter, a new Facility Improvement Letter will be required.

Design drawings for your project must be in conformance with the District's *Water, Sewer and Recycled Water Design and Construction Standards*.

This proposed project is an approximately 382-lot residential subdivision on 142.47 acres. Water service, sewer service, and fire hydrants are requested. The property is within the District boundary.

This letter is not a commitment to serve, but does address the location and approximate capacity of existing facilities that may be available to serve your project.

Water Supply
As of January 1, 2020, there were 21,598 equivalent dwelling units (EDUs) of water supply available in the Western/Eastern Water Supply Region. Your project as proposed on this date would require 337.75 EDUs of water supply.

Water Facilities
An 18-inch water line exists in Highway 49 and a 10-inch water line is located in Fowler Lane. Several water lines of various sizes are located around the project perimeter (see enclosed System Map). The Diamond Springs/El Dorado Fire Protection District has determined that the

minimum fire flow for this project is 1500 GPM for a 2-hour duration while maintaining a 20-psi residual pressure. According to the District's hydraulic model, the existing system can deliver the required fire flow. In order to provide this fire flow and receive service, you must construct a water line extension connecting to the previously identified water lines in Highway 49 and Fowler Lane. This project will also be required to connect to a water main from the Deer Park Estates Subdivision located west of the property to be developed. These facilities have a lower operating hydraulic grade line and as a result the FPR will need to evaluate pressure zone separation in the proposed design. The hydraulic grade line for the existing water distribution facilities (Hwy 49/Fowler Ln) is 2,033 feet above mean sea level at static conditions and 1,950 feet above mean sea level during fire flow and maximum day demands.

The flow predicted above was developed using a computer model and is not an actual field flow test.

The fire flow letter provided by Diamond Springs El Dorado Fire dated April 30, 2021 included the following statement:

> *"This project may include R2 multifamily residential in the future project submittal and design. Large multi-family residential unties will require additional verification of adequate fire flow based on construction type, and square footage, and..."*

This FIL evaluated a 1,500 GPM fire flow. If a larger fire flow is required, a new FIL will be required. This should be determined prior to the submittal of the Facility Plan Report (FPR).

Sewer Facilities

A 24-inch gravity sewer main is located in Highway 49 near the intersection of Tullis Mine Road. This gravity line has adequate capacity to serve the project. A sewer lift station will be required to pump waste water to this gravity line. There is an existing District lift station (Deb's Frosty Lift Station) and force main/gravity lines located on the property to be developed. This existing lift station does not have adequate capacity to serve any of the proposed project. It is preferred by the District that in lieu of two stations on the property, the project should make an attempt to grade in such a way as to allow for a single new lift station that would serve both the proposed project and existing demands. If this is not feasible, the project will be required to construct odor control at the existing lift station, in addition to constructing a new lift station to serve the project. The FPR shall address the lift station options and evaluation. In order to receive service from this line, an extension of facilities of adequate size must be constructed. Cost sharing between the District and the Developer shall be discussed during the tentative map /FPR process.

Your project as proposed on this date would require 325.75 EDUs of sewer service.

Facility Plan Report

A FPR will be required for this project. The FPR shall address the expansion of the water and sewer facilities and the specific fire flow requirements for all phases of the project. A meeting to discuss the content of the report will be required. Please contact this office to arrange the meeting. A preliminary utility plan, prepared by your engineer, must be brought to the meeting.

Two copies of the FPR will be required along with a $3,000.00 deposit. You will be billed for actual time spent in review and processing of your FPR. Please submit the FPR and fee to our Customer Service Department. Enclosed is the FPR description and transmittal form for your use. The items listed under content in the description and the completed transmittal form must be bound in each copy of the FPR.

Easement Requirements

Proposed water lines, sewer lines, and related facilities must be located within an easement accessible by conventional maintenance vehicles. When the water lines or sewer lines are within streets, they shall be located within the paved section of the roadway. No structures will be permitted within the easements of any existing or proposed facilities. The District must have unobstructed access to these easements at all times, and generally does not allow water or sewer facilities along lot lines.

Easements for any new District facilities constructed by this project must be granted to the District prior to District approval of water and/or sewer improvement plans, whether onsite or offsite. In addition, due to either nonexistent or prescriptive easements for some older facilities, any existing onsite District facilities that will remain in place after the development of this property must also have an easement granted to the District.

Environmental

The County is the lead agency for environmental review of this project per Section 15051 of the California Environmental Quality Act Guidelines (CEQA). The County's environmental document should include a review of both offsite and onsite water and sewer facilities that may be constructed by this project. You may be requested to submit a copy of the County's environmental document to the District if your project involves significant off-site facilities. If the County's environmental document does not address all water and sewer facilities and they are not exempt from environmental review, a supplemental environmental document will be required. This document would be prepared by a consultant. It could require several months to prepare and you would be responsible for its cost.

Summary

Service to this proposed development is contingent upon the following:

- The availability of uncommitted water supplies at the time service is requested;
- Approval of the County's environmental document by the District (if requested);
- Approval of a Facility Plan Report by the District;
- Executed grant documents for all required easements;
- Approval of an extension of facilities application by the District;
- Approval of facility improvement plans by the District;
- Construction by the developer of all onsite and offsite proposed water and sewer facilities;
- Acceptance of these facilities by the District; and
- Payment of all District connection costs.

Services shall be provided in accordance with El Dorado Irrigation District Board Policies and Administrative Regulations, as amended from time-to-time. As they relate to conditions of and fees for extension of service, District Administrative Regulations will apply as of the date of a fully executed Extension of Facilities Agreement.

If you have any questions, please contact Marc Mackay at (530) 642-4135.

Sincerely,

FOR

Michael J. Brink, P.E.
Supervising Civil Engineer

MB/MM:kh

Enclosures: System Map
FPR Guidelines and transmittal

cc w/ System Map:

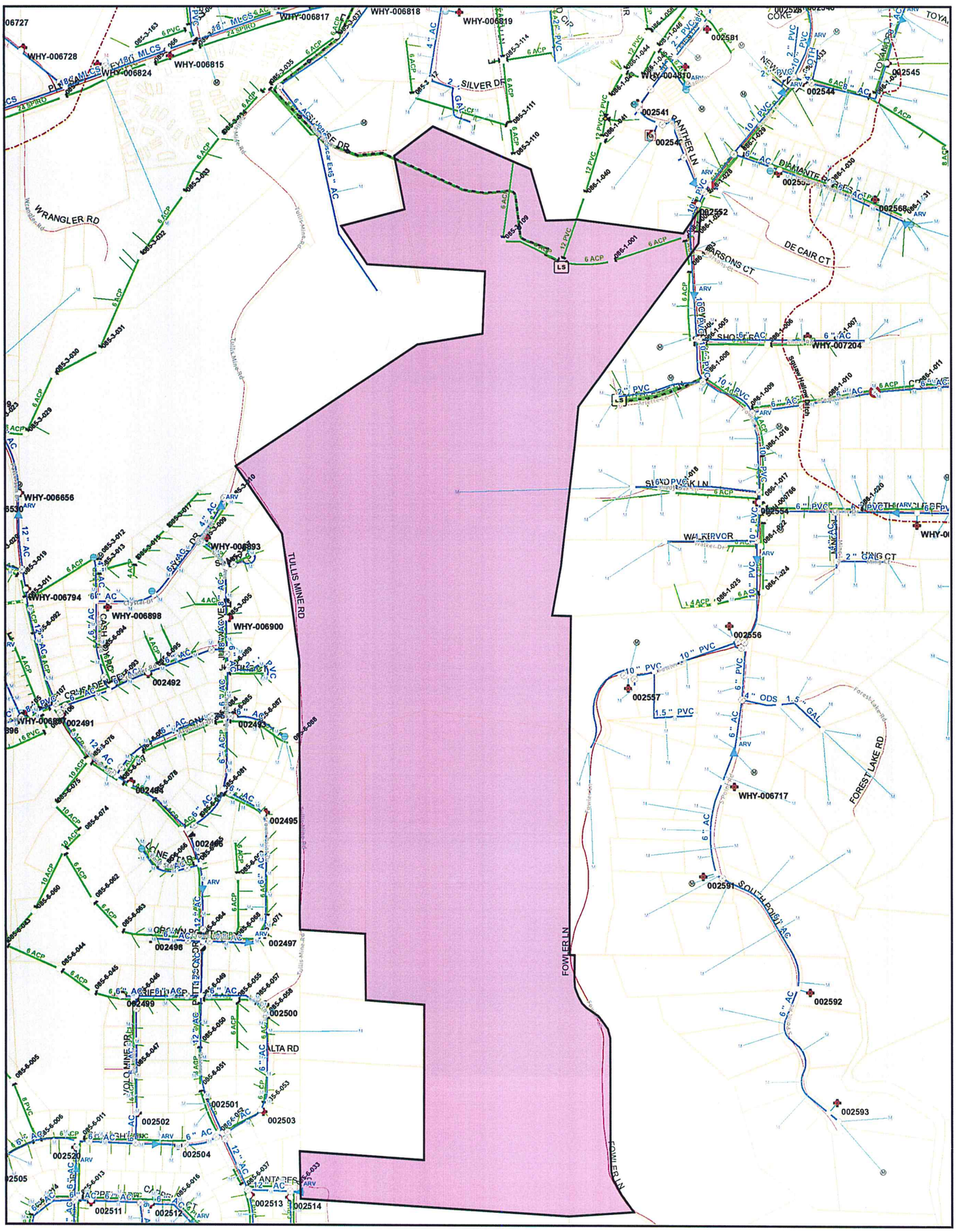
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Dorado Oaks



Scale: NTS

Date: *May 28,2021*

Project: *Dorado Oaks*

APN: 329-301-15 & 20 +
329-310-10,11,12

Author: Web AppBuilder for ArcGIS
Print date: May 3, 2021
WARNING: No accuracy of map implied until field checked by EID. Exact pipe locations must be field verified.